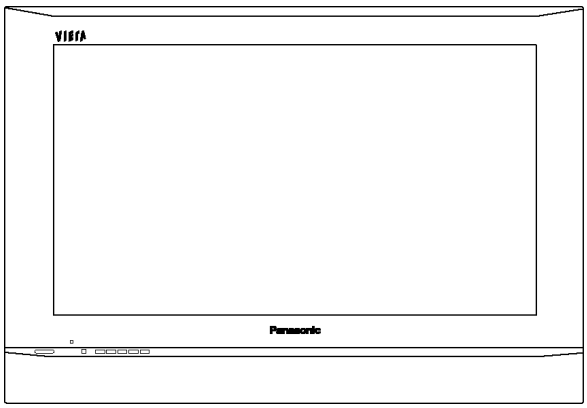
ORDER NO.PCZ0503029C2

Service Manual

Digital Progressive Wide Plasma Television



TH-42PA50E
TH-42PE50B
TH-37PA50E
TH-37PE50B

GP8DE Chassis

Specifications

Power Source	AC 220-240 V, 50 / 60 Hz
Power Consumption	Average use : 245 W (TH-37PA50E)
	Average use : 315 W (TH-42PA50E)
	Average use : 253 W (TH-37PE50B)
	Average use : 323 W (TH-42PE50B)
	Standby condition : 0.3 W (TH-37/42PA50E)
	Standby condition : 0.3 W (Without DVB Timer programmes) (TH-37/42PE50B)
	Standby condition : 16 W (With DVB Timer programmes) (TH-37/42PE50B)
Plasma Display panel	
Drive method	AC type
Aspect Ratio	16:9
Contrast Ratio	4000:1
Screen size (No.of pixels)	818 mm (W) × 461 mm (H) × 939 mm (diagonal) (37-inch)
	920 mm (W) × 518 mm (H) × 1,056 mm (diagonal) (42-inch)
	408,960 (852 (W) × 480 (H)) [2,556 × 480 dots]
Sound	
Speaker	12 cm × 6 cm × 2 pcs, 6 Ω
Audio Output	16 W (8 W + 8 W), 10% THD
Applicable signals	
Colour System	NTSC, PAL, PAL60, SECAM, Modifi ed NTSC
Scanning format	480i(60Hz), 480p(60Hz), 576i(50Hz), 576p(50Hz), 720p(50Hz), 720p(60Hz), 1080i(50Hz), 1080i(60Hz)
Receiving Systems / Band name (PA50E)	PAL B, G, H, SECAM B, G SECAM L / L’

VHF E2 - E12	VHF H1 - H2 (ITALY)
VHF A - H (ITALY)	UHF E21 - E69
CATV (S01 - S05)	CATV S1 - S10 (M1 - M10)
CATV S11 - S20 (U1 - U10)	CATV S21 - S41 (Hyperband)

PAL D, K, SECAM D, K

Panasonic®

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	VHF R1 - R2	VHF R3 - R5
	VHF R6 - R12	UHF E21 - E69
	PAL 525/60	
	Playback of NTSC tape from some PAL Video re cord ers (VCR)	
	M.NTSC	
	Playback from M. NTSC Video recorders (VCR)	
	NTSC (AV input only)	
	Playback from NTSC Video recorders (VCR)	
Receiving Systems / Band name (PE50B)	PAL I	
	UHF E21-68.	
	PAL 525/60	
	Playback of NTSC tape from some PAL Video recorders (VCR) or NTSC disc playback from DVD player and recorder.	
	DVB	
	Digital terrestrial services via UHF aerial input.	
	M.NTSC	
	Playback from M.NTSC Video recorders (VCR).	
	NTSC (AV input only)	
	Playback from NTSC Video recorders (VCR).	
Aerial - Rear	UHF / VHF (PA50E)	
	UHF (PE50B)	
Operating Conditions	Temperature : 0 °C - 40 °C	
	Humidity : 20 % - 80 % RH (non-condensing)	
Connection Terminals		
AV1 (Scart connecter)	21 Pin terminal (Audio/Video in, Audio/Video out, RGB in)	
AV2 (Scart connecter)	21 Pin terminal (Audio/Video in, Audio/Video out, S-Video in, Q-Link)	
AV3 (Scart connecter)	21 Pin terminal (Audio/Video in, Audio/Video out, RGB in, S-Video in, Q-Link)	
COMPONENT		
VIDEO	Y	1.0 Vp-p (including synchronization)
	PB, PR	±0.35 Vp-p
AUDIO L - R	RCA PIN Type × 2	0.5 Vrms
Output		
AUDIO L - R	RCA PIN Type × 2	0.5 Vrms (high impedance)
Dimensions (W × H × D)	968 mm × 641 mm × 96.5 mm (37-inch)	
	1,068 mm × 701 mm × 96.5 mm (42-inch)	
Weight	28.5 kg Net (37-inch)	
	33 kg Net (42-inch)	

Notes:

- Design and Specifi cations are subject to change without notice. Weight and Dimensions shown are approximate.
- This equipment complies with the EMC standards listed below.

  EN55013, EN61000-3-2, EN61000-3-3, EN55020

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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1 Applicable signals

Applicable input signal for Component(Y, P_B, P_R)

Signal name	Horizontal frequency (kHz)	Vertical frequency (Hz)
525(480)/60i	15.73	59.94
525(480)/60p	31.47	59.94
625(576)/50i	15.63	50.00
625(576)/50p	31.25	50.00
750(720)/50p	37.50	50.00
750(720)/60p	45.00	60.00
1125(1080)/50i	28.13	50.00
1125(1080)/60i	33.75	60.00

Note: Signals other than above may not be displayed properly.

2 Safety Precautions

2.1. General Guidelines

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

2.2. Touch-Current Check

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a measuring network for touch currents between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use Leakage Current Tester (Simpson 228 or equivalent) to measure the potential across the measuring network.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reserve the AC plug in the AC outlet and repeat each of the above measure.
6. The potential at any point (TOUGH CURRENT) expressed as voltage U_1 and U_2, does not exceed the following values:

   For a. c.: U_1 = 35 V (peak) and U_2 = 0.35 V (peak);

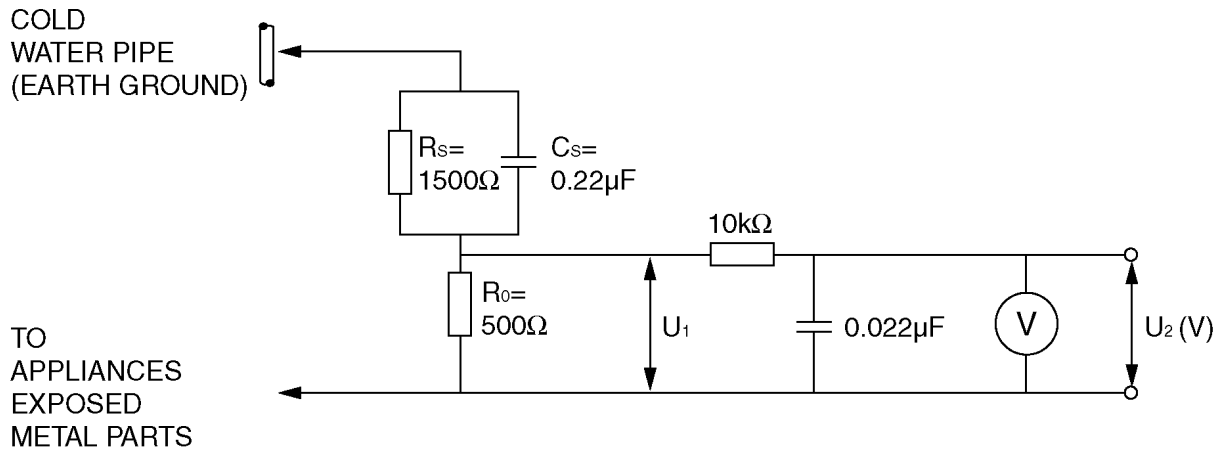
   For d. c.: U_1 = 1.0 V,

   Note:

   The limit value of U_2 = 0.35 V (peak) for a. c. and U_1 = 1.0 V for d. c. correspond to the values 0.7 mA (peak) a. c. and 2.0 mA d. c.

   The limit value U_1 = 35 V (peak) for a. c. correspond to the value 70 mA (peak) a. c. for frequencies greater than 100 kHz.
7. In case a measurement is out of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

Measuring network for TOUCH CURRENTS



Resistance values in ohms (Ω)

V: Voltmeter or oscilloscope
(r.m.s. or peak reading)

Input resistance: ≥ 1 MΩ
Input capacitance: ≤ 200 pF
Frequency range: 15 Hz to 1 MHz and d.c. respectively

NOTE - Appropriate measures should be taken to obtain the correct value in case of non-sinusoidal waveforms.

Figure 1

3 Prevention of Electro Static Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as alminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, alminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   Caution

   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise hamless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are imporant for safety.
These parts are marked by ⚠ in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

4 About lead free solder (PbF)

Note: Lead is listed as (Pb) in the periodic table of elements.

In the information below, Pb will refer to Lead solder, and PbF will refer to Lead Free Solder.

The Lead Free Solder used in our manufacturing process and discussed below is (Sn+Ag+Cu).

That is Tin (Sn), Silver (Ag) and Copper (Cu) although other types are available.

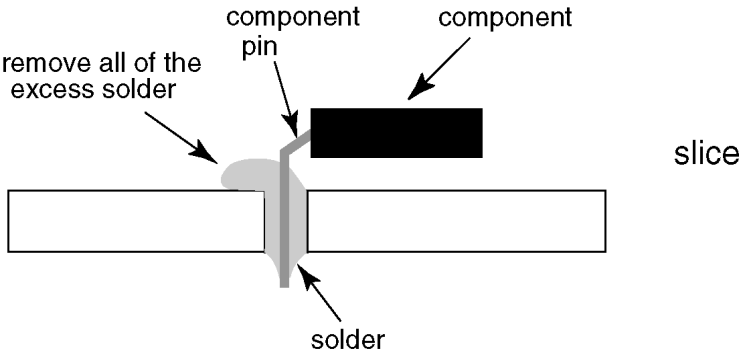
This model uses Pb Free solder in it's manufacture due to environmental conservation issues. For service and repair work, we'd suggest the use of Pb free solder as well, although Pb solder may be used.

PCBs manufactured using lead free solder will have the PbF within a leaf Symbol PbF stamped on the back of PCB.

Caution

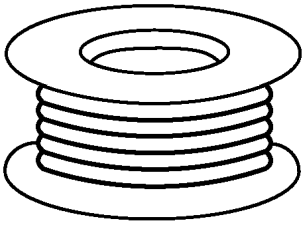
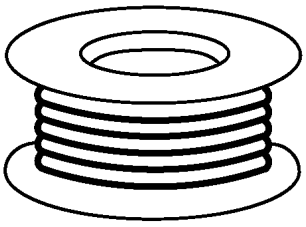
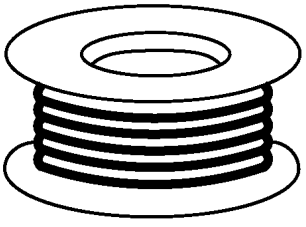
- Pb free solder has a higher melting point than standard solder. Typically the melting point is 50 ~ 70 °F (30~40 °C) higher. Please use a high temperature soldering iron and set it to 700 ± 20 °F (370 ± 10 °C).
- Pb free solder will tend to splash when heated too high (about 1100 °F or 600 °C).

  If you must use Pb solder, please completely remove all of the Pb free solder on the pins or solder area before applying Pb solder. If this is not practical, be sure to heat the Pb free solder until it melts, before applying Pb solder.
- After applying PbF solder to double layered boards, please check the component side for excess solder which may flow onto the opposite side. (see figure below)



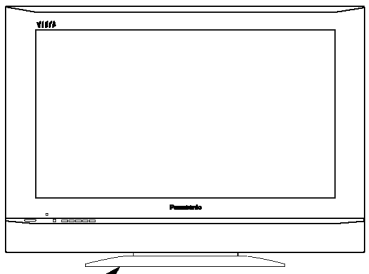
Suggested Pb free solder

There are several kinds of Pb free solder available for purchase. This product uses Sn+Ag+Cu (tin, silver, copper) solder. However, Sn+Cu (tin, copper), Sn+Zn+Bi (tin, zinc, bismuth) solder can also be used.

0.3mm X 100g	0.6mm X 100g	1.0mm X 100g
		

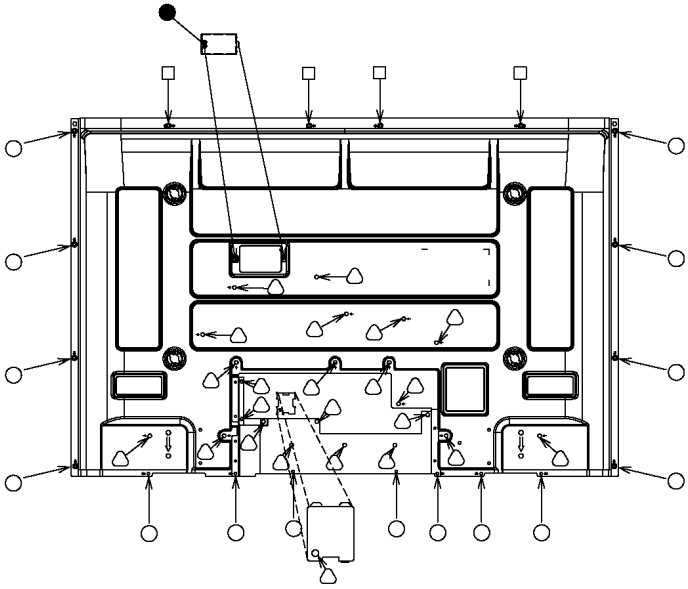
5 Service Hint

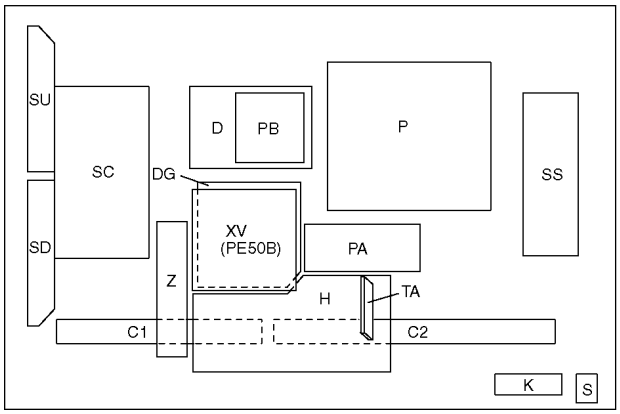
Stand the Unit used for Pedestal



Pedestal

Remove the Back Cover





Remove:
15 screws (○) XTB4+15AFJK
1 screws (●) XTB4+12GFJK
4 screws (□) THEL0439
23 screws (△) THEL0429

Service Position

Board Name	Function	Board Name	Function
P	Power Supply	C1	Data Driver (Left)
PA	DC-DC Converter, Power SOS	C2	Data Driver (Right)
PB	Audio Power	SC	Scan Drive
H	AV Terminal, AV Switch, MSP	SU	Scan out (Upper)
TA	Tuner	SD	Scan out (Lower)
XV (PE50B)	D-TV Interface	SS	Sustain Drive
DG	Digital Signal Processor	K	Remote receiver, Keyscan
Z	Speaker AMP	S	Power Switch
D	Format Converter, Plasma AI Processor		

6 Plasma panel replacement method

6.1. Remove the Back cover.

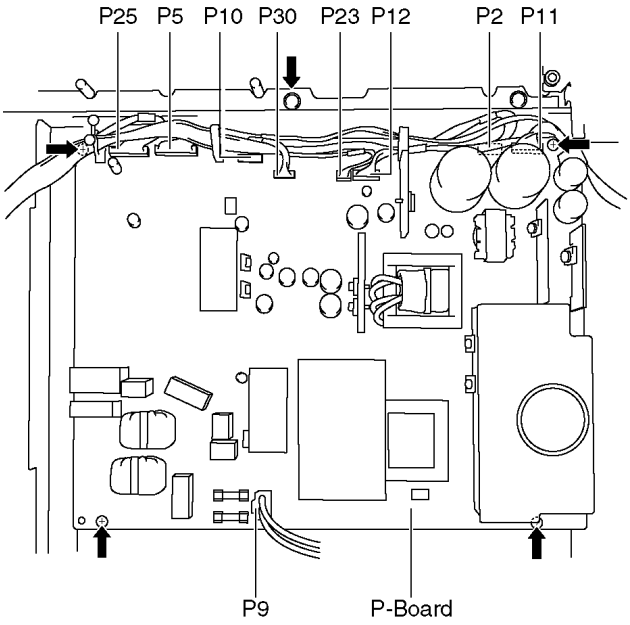
1. See Service Hint (Section 5).

6.2. Remove the P-Board.

Caution:

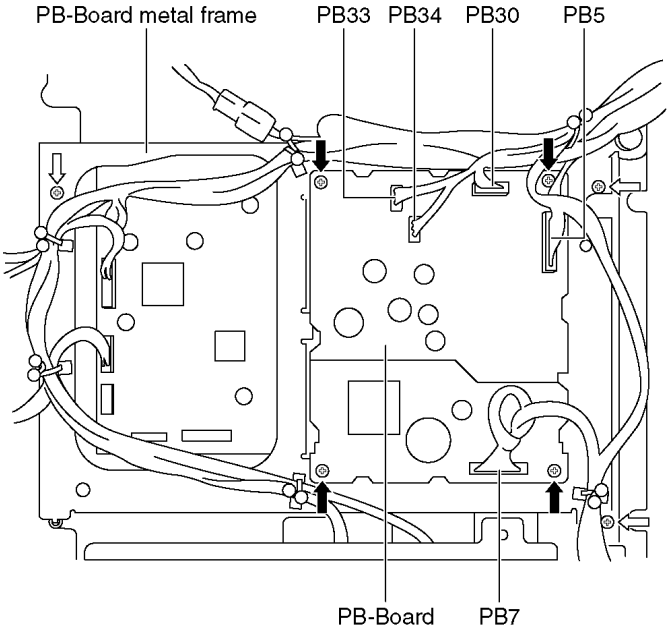
To remove P.C.B., wait 1 minute after power was off for discharge from electrolisis capacitors.

1. Disconnect the couplers (P2, P5, P9, P10, P11, P12, P23, P25 and P30).
2. Remove the screws (×5 ➡) and remove the P-Board.



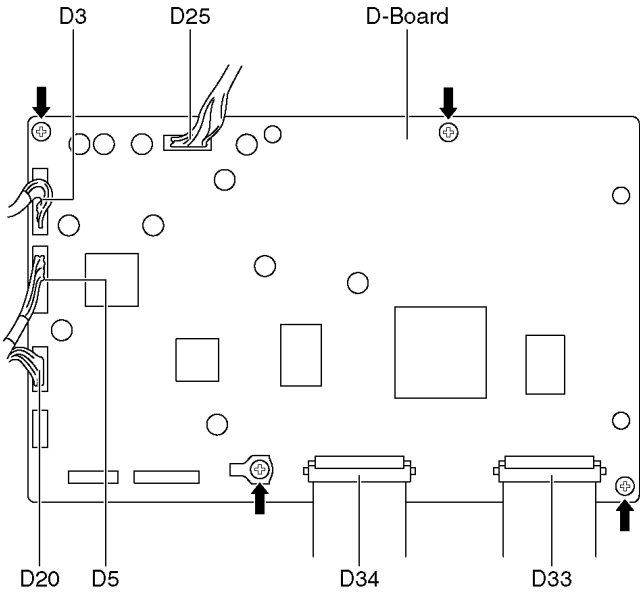
6.3. Remove the PB-Board

1. Unlock the cable clampers to free the cable.
2. Disconnect the couplers (PB5, PB7, PB30, PB33 and PB34).
3. Remove the screws (×3 ⇨) and remove the PB-Board metal frame.
4. Remove the screws (× 4 ➡) and remove the PB-Board.



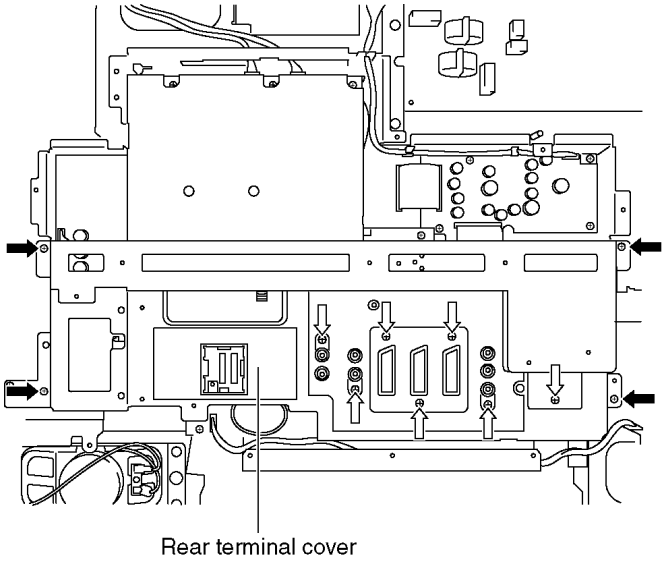
6.4. Remove the D-Board

1. Remove the PB-Board.
2. Disconnect the couplers (D3, D5, D20 and D25) and
3. Disconnect the flexible cables (D33 and D34).
4. Remove the screws (×4 ➡) and remove the D-Board.



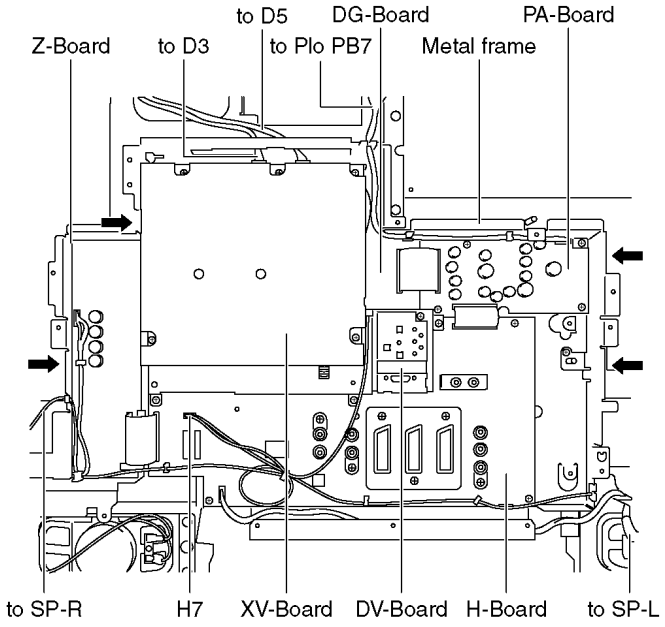
6.5. Remove the rear terminal cover

1. Remove the screws (×4 ➡), and rhe screw (×7 ⇨).
2. Remove the rear terminal cover.



6.6. Remove the metal frame

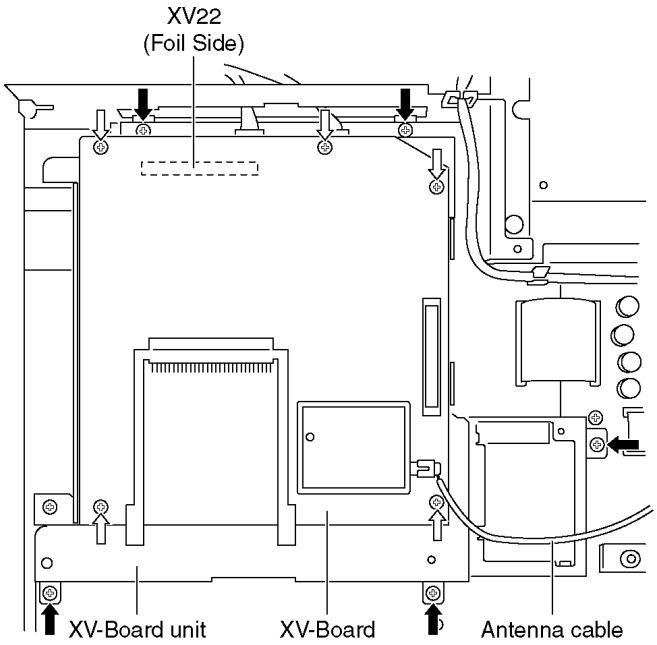
1. Unlock the cable clampers to free the cable.
2. Disconnect the couplers (D3, D5, H7, P10 and PB7) and relay connector (SP-R, SP-L).
3. Remove the screws (×4 ➡) remove the metal frame.



6.7. Remove the XV-Board (PE50B only)

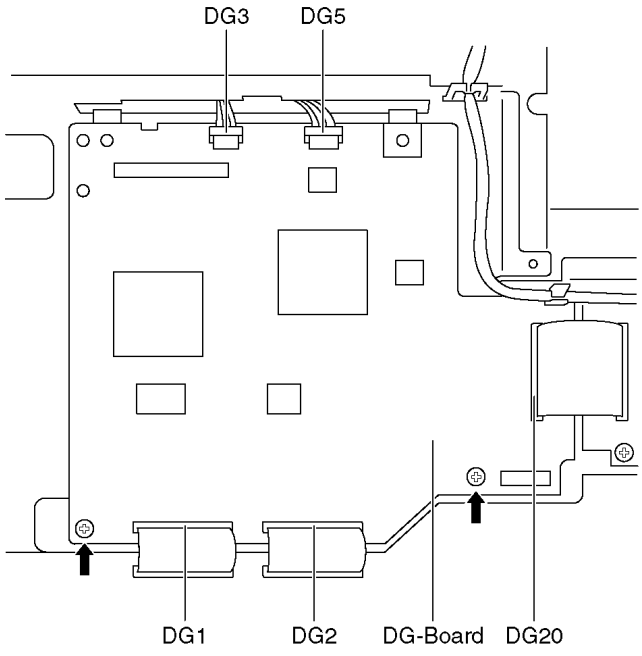
1. Disconnect the antenna cable.
2. Remove the screws (×5 ➡).
3. Remove the XV-Board unit.

   (Be careful the couplers (XV22 and DG22) when remove the XV-Board unit.)
4. Remove the screws (×5 ⇨).
5. Remove the XV-Board.



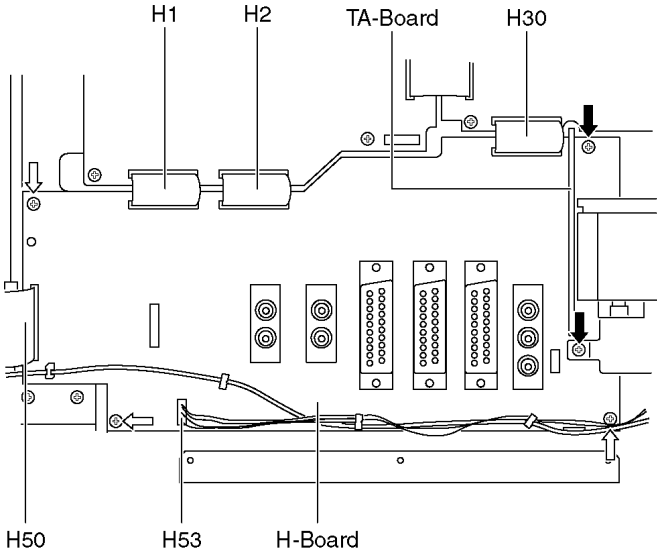
6.8. Remove the DG-Board

1. Unlock the cable clampers to free the cable.
2. Disconnect the couplers (DG3 and DG5).
3. Disconnect the flexible cables (DG1, DG2 and DG20).
4. Remove the screws (×2 ➡) and remove the DG-Board.



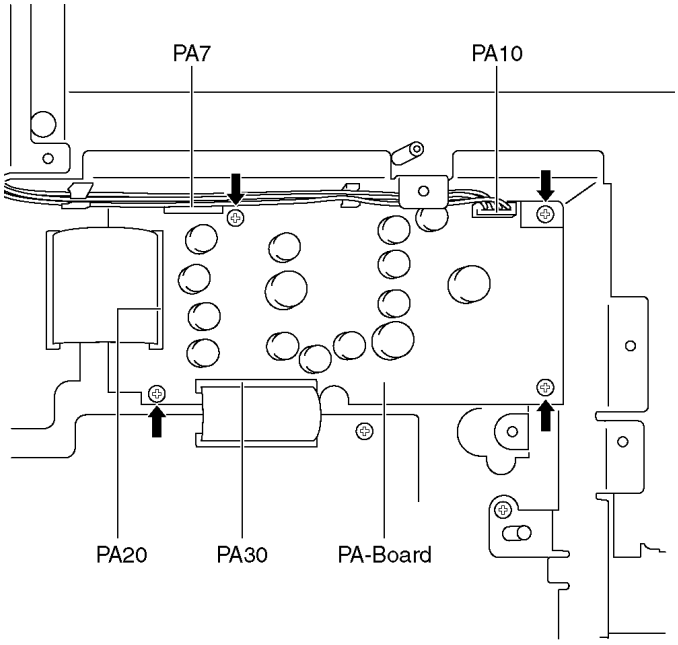
6.9. Remove the H-Board and TA-Board

1. Unlock the cable clampers to free the cable.
2. Remove the screws (×2 ➡) and remove the TA-Board.
3. Disconnect the coupler (H53).
4. Disconnect the flexible ables (H1, H2, H30 and H50).
5. Remove the screws (×3 ⇨) and remove the H-Board.



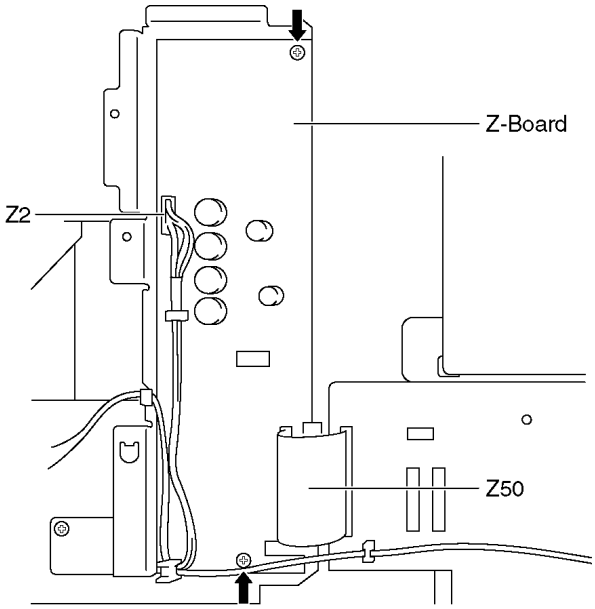
6.10. Remove the PA-Board

1. Unlock the cable clampers to free the cable.
2. Disconnect the couplers (PA7 and PA10).
3. Disconnect the flexible cables (PA20 and PA30).
4. Remove the screws (×4 ➡) and remove the PA-Board.



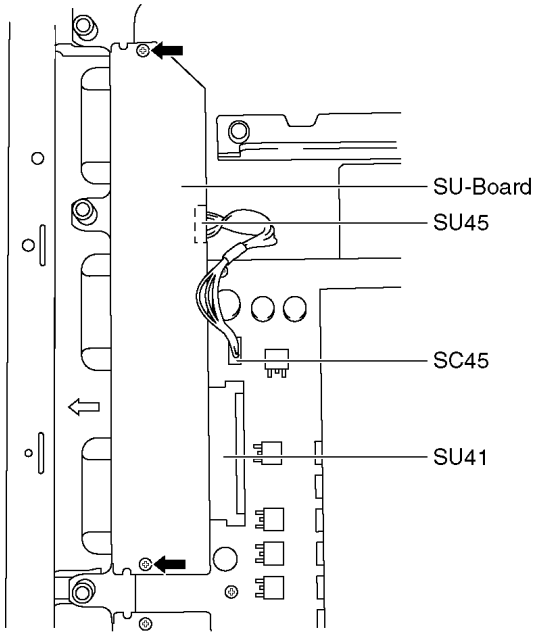
6.11. Remove the Z-Board

1. Unlock the cable clampers to free the cable.
2. Disconnect the coupler (Z2).
3. Disconnect the flexible cable (Z50).
4. Remove the screws (×2 ➡) and remove the Z-Board.

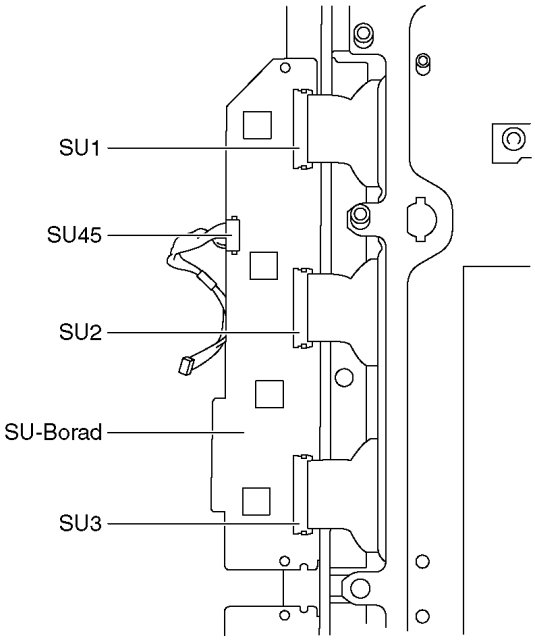


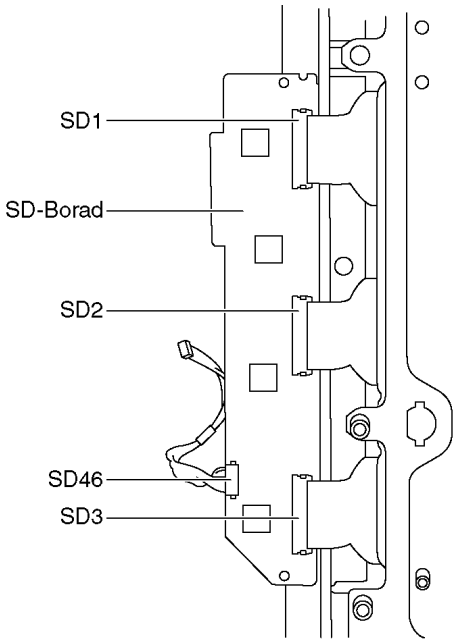
6.12. Remove the SU-Board

1. Remove the screws (×2 ➡)
2. Slide the SU-Board to the left to disconnect from a coupler (SC41 - SU41) on the SC-Board and disconnect a coupler (SU45 or SC45).



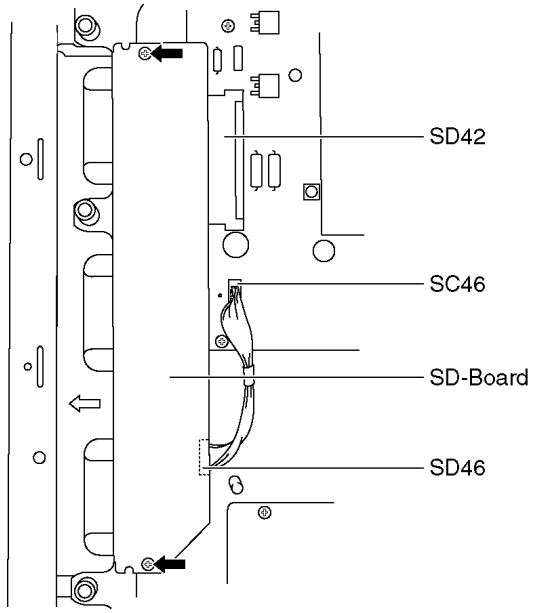
3. Disconnect the flexible cables (SU1, SU2, SU3) connected to the SU-Board, and remove the SU-Board.





6.13. Remove the SD-Board

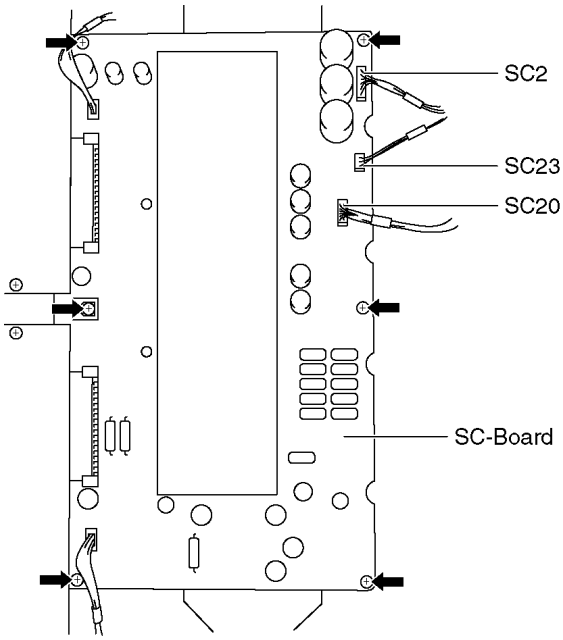
1. Remove the screws (×2 ➡)
2. Slide the SD-Board to the left to disconnect from a coupler (SC42 - SD42) on the SC-Board and disconnect a coupler (SD46 or SC46).



3. Disconnect the flexible cables (SD1, SD2, SD3) connected to the SU-Board, and remove the SD-Board.

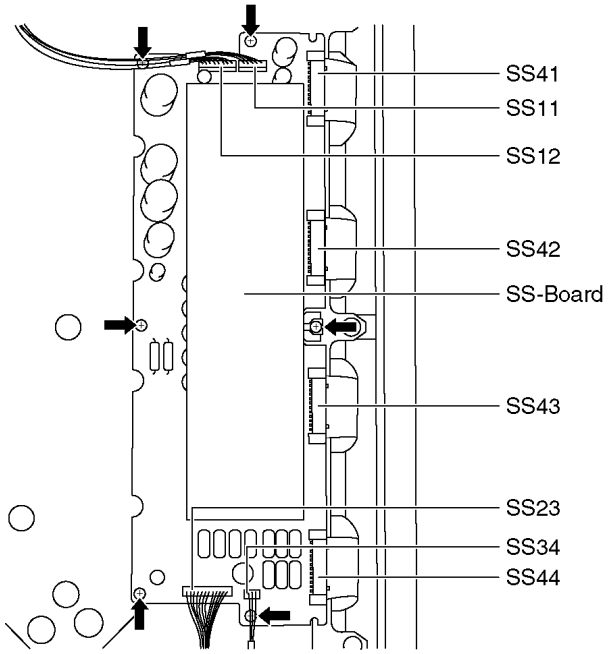
6.14. Remove the SC-Board

1. Disconnect the couplers (SC2, SC20, SC23).
2. Remove the screws (×6 ➡) and remove the SC-Board.



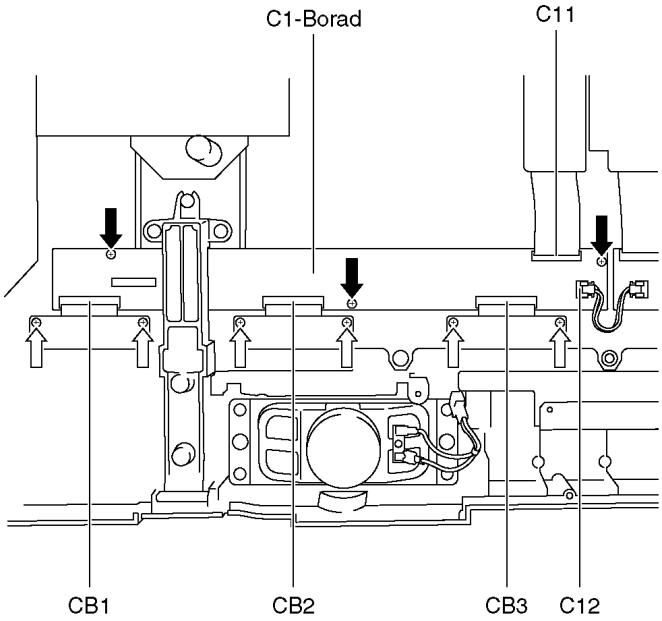
6.15. Remove the SS-Board

1. Disconnect the couplers (SS11, SS12, SS23 and SS34).
2. Disconnect the flexible cables (SS41, SS42, SS43 and SS44).
3. Remove the screws (×6 ➡) and remove the SS-Board.



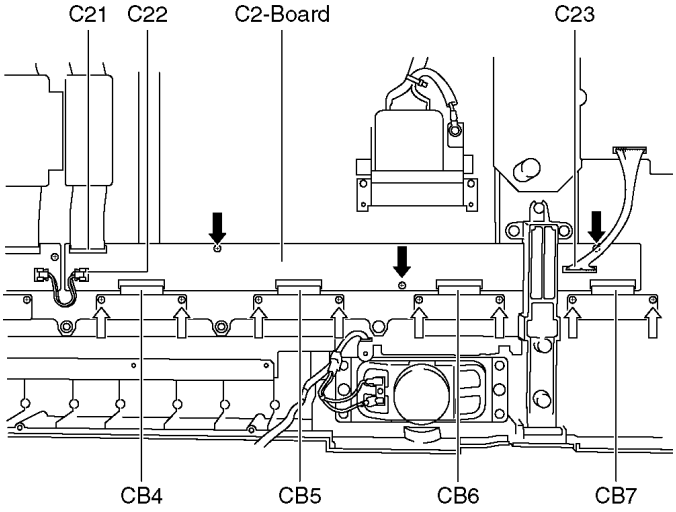
6.16. Remove the C1-Board

1. Remove the flexible cables holder fastening screws (×6 ⇨).
2. Disconnect the flexible cables (CB1, CB2 and CB3).
3. Disconnect the flexible cable (C11).
4. Disconnect the coupler (C12).
5. Remove the screws (×3 ➡) and remove the C1-Board.



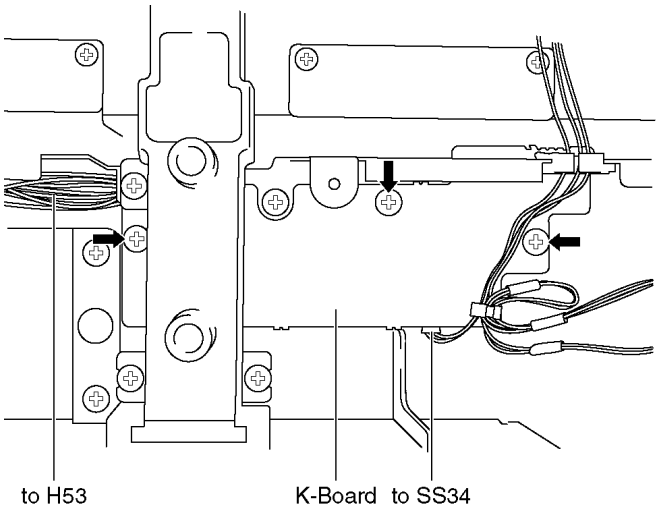
6.17. Remove the C2-Board

1. Remove the flexible cables holder fastening screws (×8 ⇨).
2. Disconnect the flexible cables (CB4, CB5, CB6 and CB7).
3. Disconnect the flexible cable (C21).
4. Disconnect the couplers (C22 and C23).
5. Remove the screws (×3 ➡) and slide the C2-Board to the left and remove the C2-Board.



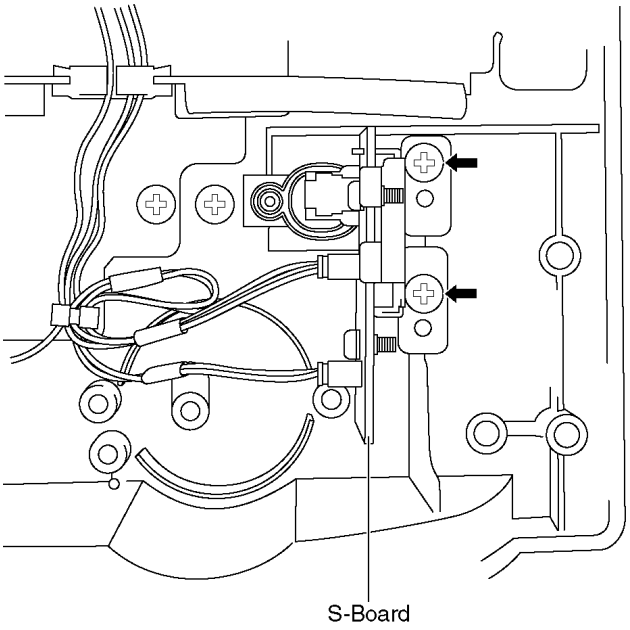
6.18. Remove the K-Board

1. Unlock the cable clampers to free the cable.
2. Disconnect the couplers (H53 and SS34).
3. Remove the screws (×3 ➡) and remove the K-Board.

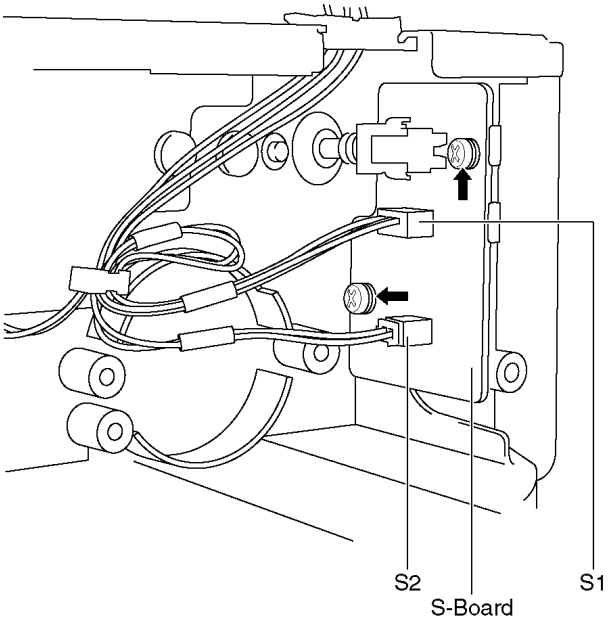


6.19. Remove the S-Board

1. Remove the screw (×2 ➡) and remove the S-Board unit.

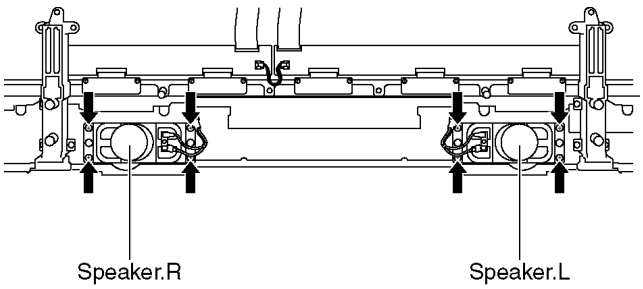


2. Unlock the cable clampers to free the cable.
3. Disconnect the couplers (S1 and S2).
4. Remove the screws (×2 ➡) and remove the S-Board.



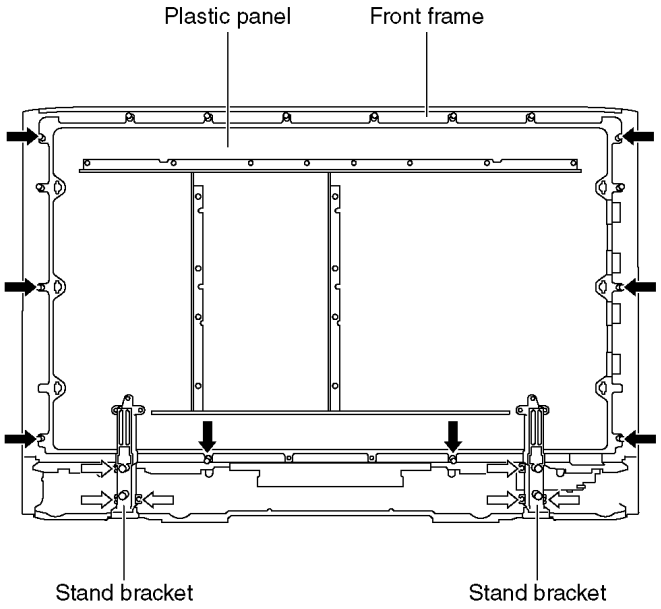
6.20. Remove the Speaker L, R

1. Remove the screw (×8 ➡) and remove the Speaker L, R.

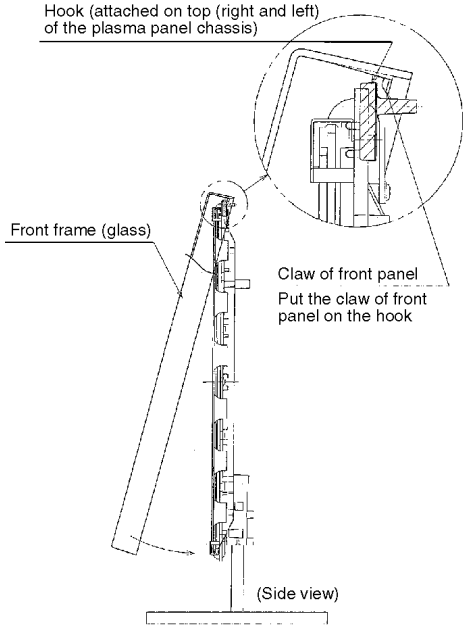


6.21. Remove the Plasma panel section from the Front frame (glass)

1. Remove the front frame and the plasma panel fastening screw (×8 ➡).
2. Remove the front frame and the stand brackets fastening screw (×6 ⇨).



3. For leaving the plasma panel from the front frame, pull the bottom of the front frame forward, lift, and remove.



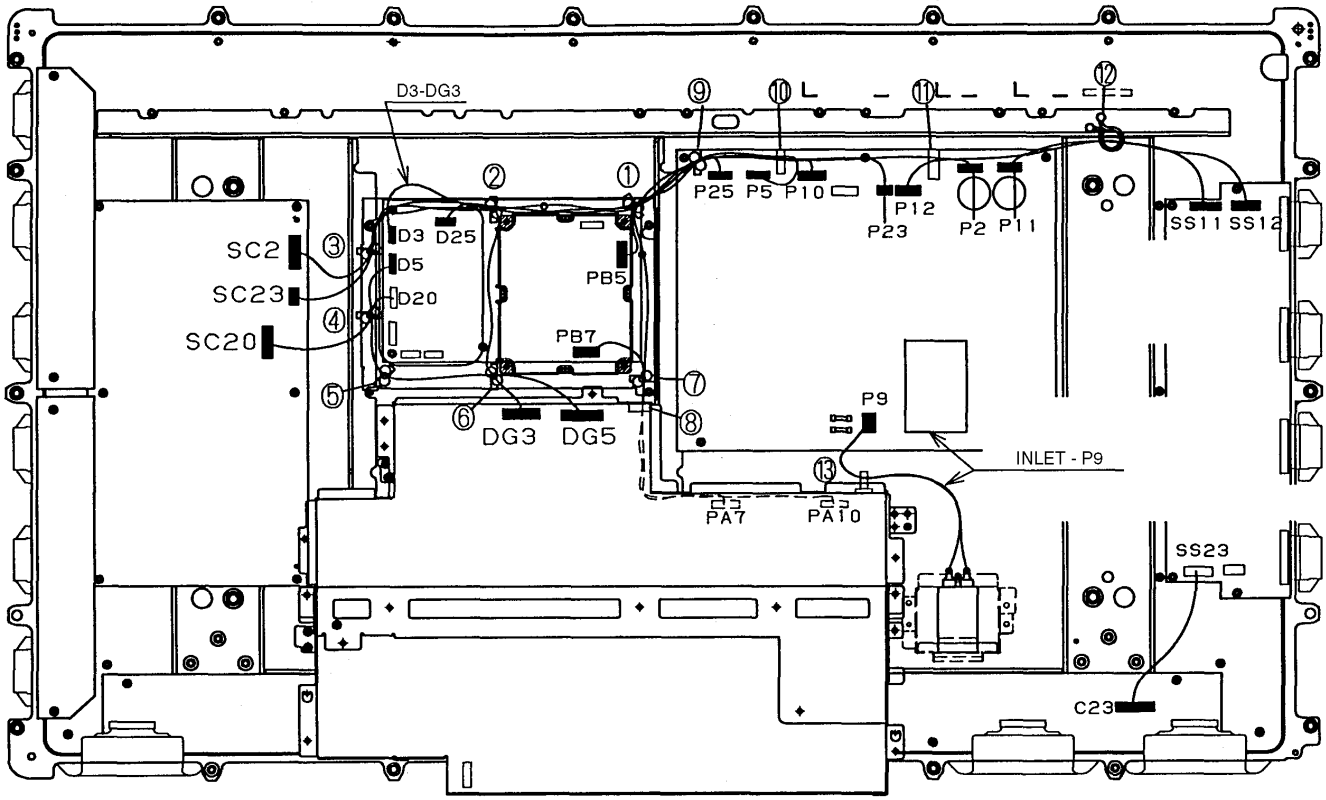
6.22. Replace the plasma panel (finished).

1. Place the new plasma panel (finished) on the flat surface of the table (covered by a soft cloth), with the plasma panel surface facing downward.
2. Attach the C1-Board and the C2-Board, connect the flexible cables (×7) from the Plasma panel to the C1-Board and C2-Board, and fix the flexible cable holders.
3. Attach the Hooks (left, right) and fit the stand brackets (left, right) to the new plasma panel.
4. Place the plasma panel section on the servicing stand.
5. Attach the front frame and the each P.C.Board and so on, to the new plasma panel.

   *** When fitting the front frame, be careful not to allow any debris, dust or handling residues to remain between the front glass and plasma panel.**

7 Location of Lead Wiring

7.1. Lead of Wiring (1)

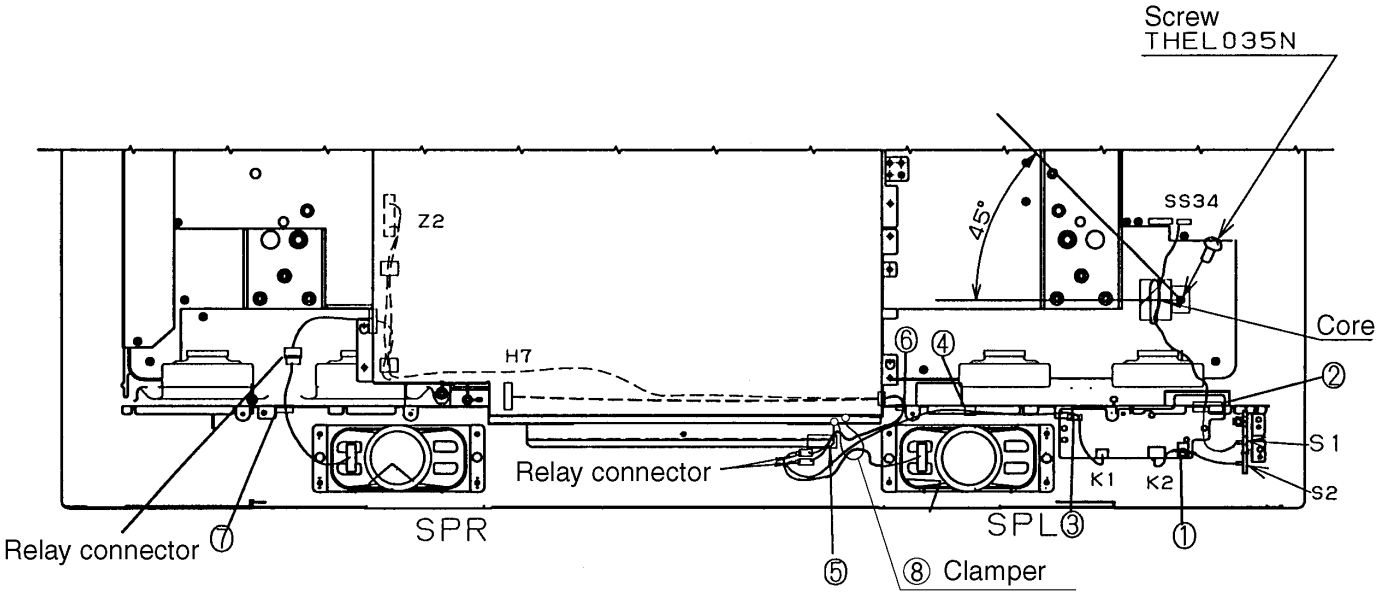


7.2. Lead of Wiring (2)

CON : No. —— CON : No.	1	2	3	4	5	6	7	8	9	10	11	12	13
SC2 —— P9	○	○	○						○	○	○		
SC23 —— P23	○	○	○						○	○			
SC20 —— D20				○									
DG3 —— D3		○				○							
DG5 —— D5				○	○	○							
D25 —— P25	○	○							○				
PB5 —— P5	○								○	○			
PA7 —— PB7							○	○					
PA10 —— P10	○						○	○	○	○			
SS11 —— P11												○	
SS12 —— P12											○	○	
SS23 —— C23													
AC INLET —— P9													○

Connector Connection: P2, P5, P9, P10, P11, P12, P23,, P25
D3, D5, D25,
PB7, PB5,
SC2, SC20, SC23,
SS11, SS12,
DG3, DG5,
C23

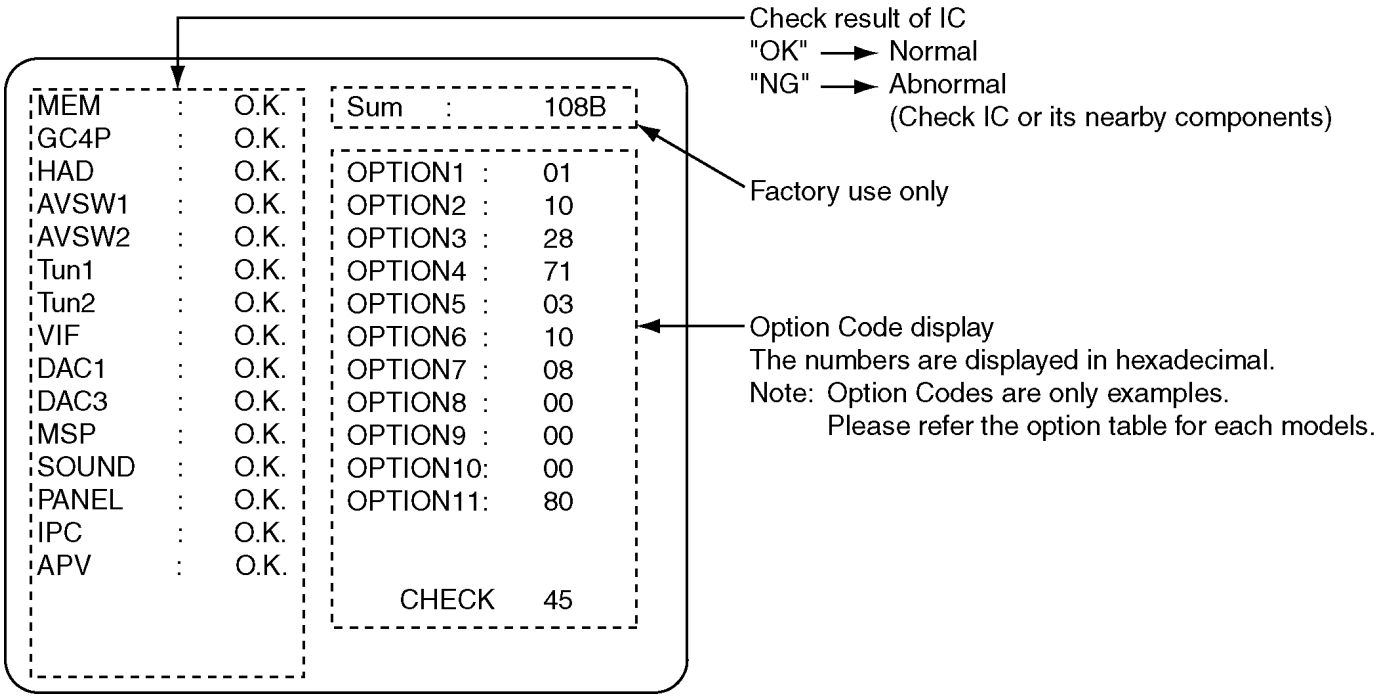
7.3. Lead of Wiring (3)



CON : No. —— CON : No.	①	②	③	④	⑤	⑥	⑦	⑧			
S1 —— SS34		○									
K2 —— H7			○	○	○	○		○			
SP L —— Z2					○	○		○			
SP R —— Z2							○				
S2 —— K2	○										

8 Self Check

1. Self-Check is used to automatically check the bus lines and hexadecimal code of the TV set.
2. To get into the Self -Check mode press the Down (−/∨) button on the customer controls at the front of the set, at the same time pressing the Status button on the remote control, and the screen will show :



If the CCU ports have been checked and found to be incorrect or not located then "--" will appear in place of "O.K.".

Display	Ref.No	Description	P.C.B.
MEM	IC1107	EEPROM	DG-Board
GC4P	IC4026	Global Core for Main	DG-Board
HAD	IC4012	OSD RGB A/D	DG-Board
AVSW1	IC2105	Video SW	H-Board
AVSW2	IC3005	Audio SW	H-Board
Tun1	TU001	Tuner	TA-Board
Tun2	TU8001	Tuner	XV-Board
VIF	-	-	-
DAC1	IC1106	Ext. DAC	DG-Board
DAC3	IC3006	Ext. DAC	H-Board
MSP	IC2106	Multi Sound Processor	H-Board
SOUND	IC2300	Sound Control	Z-Board
PANEL	-	Panel	-
IPC	IC8013	HDSL PEAKS Lite	XV-Board
ADV	IC4005	10bit A/D	DG-Board

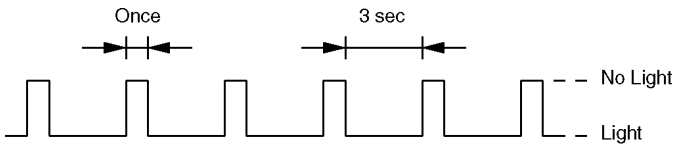
8.1. Power LED Blinking timing chart

1. Subject

   Information of LED Flashing timing chart.

2. Contents

   When an abnormality has occurred the unit, the protection circuit operates and reset to the stand by mode. At this time, the defective block can be identified by the number of blinkes of the Power LED on the front panel of the unit.

Blinking Times	Blinking timing	Contents & Check point
1		No particular check point
10		Tuner SOS (No power for tuner)
12		Sound SOS

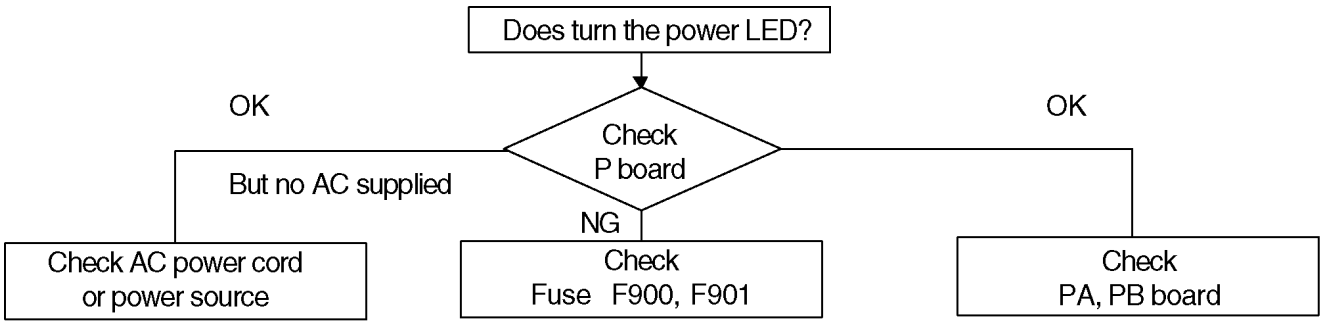
8.2. No Power

First check point

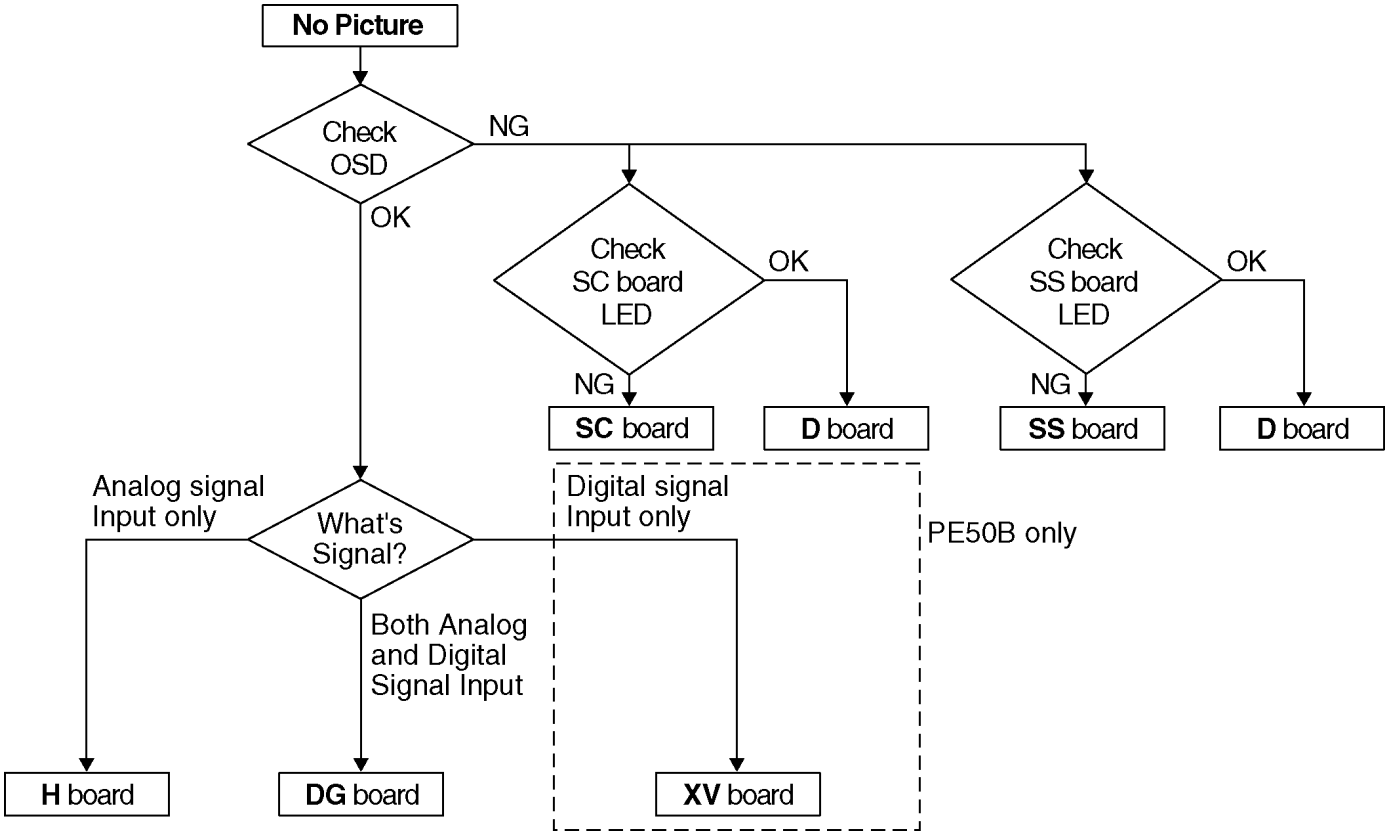
There are following 3 states of No Power indication by power LED.

1. No lit
2. Green is lit then turns red blinking a few seconds later.
3. Only red is lit.

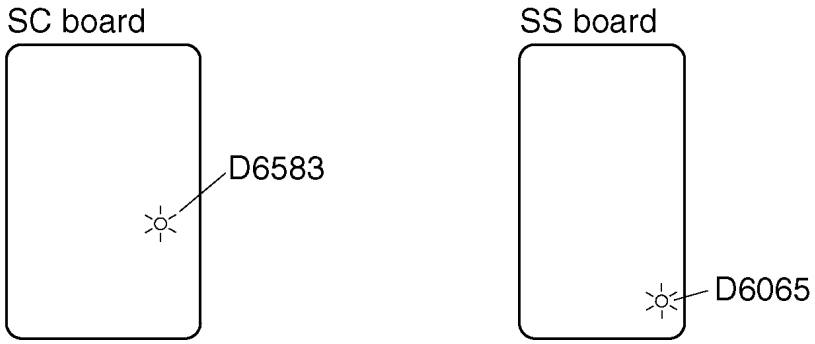
1. No lit



8.3. No Picture

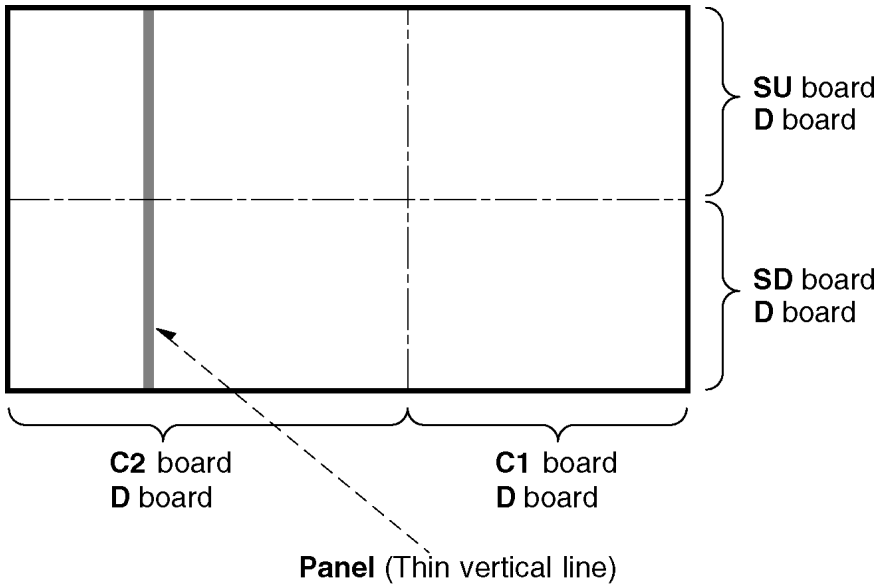


Drive circuits LED indicator



8.4. Local screen failure

Plasma display may have local area failure on the screen. Fig - 1 is the possible defect P.C.B. for each local area.



<Local screen failure chart>

Fig - 1

9 Service Mode Function

MPU controls the functions switching for each IICs through IIC bus in this chassis. The following setting and adjustment can be adjusted by remote control in Service Mode.

9.1. How to enter SERVICE 1

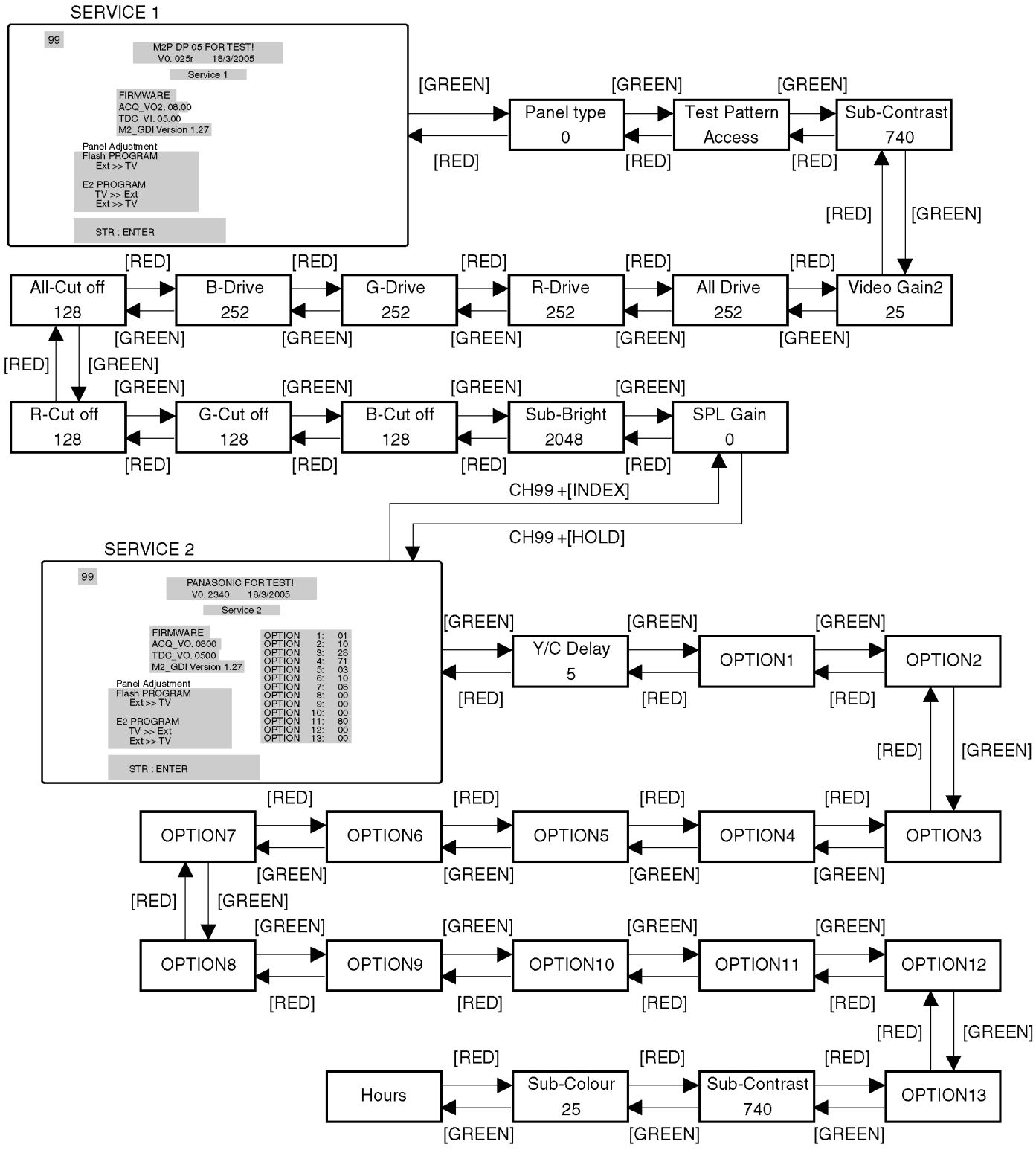
1. In sound menu, set BASS to MAXIMUM, and set TREBLE to MINIMUM.
2. Simultaneously press **INDEX** button on remote control and **DOWN** button [–/V] on the TV set.

9.2. How to enter SERVICE 2

1. Set the channel to CH99.
2. Select the SPL Gain.
3. Press HOLD button on remote control.

Note:

To exit to Service mode, press N or Power button on remote control.



Key Command

- Press the **RED/GREEN** button to step up/down through the functions.
- Press the **YELLOW/BLUE** button to change the function values.
- Press the **OK** button after each adjustment has been mode to store the required values.

9.3. Option Description

		PA50E	PE50B		
option1		4F	01		
	b0	1	1	Colour system	Auto(1)
	b1	1	0		SECAM(1)
	b2	1	0		NTSC(1)
	b3	1	0		M.NTSC(1)
	b4	0	0	A2 select 6.5MHz	5.742MHz(0) 6.742MHz(1)
	b5	0	0	SIF	I only(0), BG only(1)
	b6	1	0		I/BG/DK/L(2), BG/DK(3)
	b7	0	0	free	
option2		11	10		
	b0	1	0	A2 enable	enable(1)
	b1	0	0		not use
	b2	0	0		not use
	b3	0	0		not use
	b4	1	1	NICAM enable	enable(1)
	b5	0	0		not use
	b6	0	0		not use
	b7	0	0		not use
option3		3A	28		
	b0	0	0	SASO enable	SASO enable(1)
	b1	1	0	Fine tuning	Enable(1)
	b2	0	0	Search speed	Slow(1) Fast(0)
	b3	1	1	Tuner	MACO tuner (1), Others (0)
	b4	1	0	HYPER	UHF only (0), UHF/VHF (1)
	b5	1	1	IF I2C	I2C controlled Tuner IF module (1)
	b6	0	0	NICAM C4 bit	enable(1)
	b7	0	0	Blue Back	BLUE BACK on/off selection in menu(0)
option4		D9	71		
	b0	1	1	Aspect AUTO	enable(1)
	b1	0	0	S1/S2 enable	enable(1)
	b2	0	0	ID-1	enable(1)
	b3	1	0	User aspect Just	enable(1)
	b4	1	1	User aspect 14:9	enable(1)
	b5	0	1	ALBD 14:9	14:9 enable, Zoom3 disable at self wide(1)/ Zoom1, Zoom3 enable at self wide (0)
	b6	1	1	TEXT	enable(1)
	b7	1	0	TEXT TOP	TOP enable (1)
option5		03	03		
	b0	1	1	CH Blanking	Blanking enable (1)
	b1	1	1	AV Blanking	Blanking enable (1)
	b2	0	0	Noise mute	Noise mute enable(0)
	b3	0	0	sub picture	without sub-picture(0), with sub-picture(1)
	b4	0	0	2tuner	2tuner(1),1tuner(0)
	b5	0	0	AV Input	3rotation(1) / 2rotation without front RCA (0)
	b6	0	0	Panel (LCD)	Samsung Panel(1)/SHARP Panel(0)
	b7	0	0	Large size (LCD)	32(1)/26(0) for LCD
option6		00	10		
	b0	0	0	SD module	with SD module (1)
	b1	0	0	SD module Ext.Rec(PAL)	enable(1)
	b2	0	0	SD module Ext.Rec(NTSC)	enable(1)
	b3	0	0	SD module Ext.Rec(SECAM)	enable(1)
	b4	0	1	IDTV	enable(1)
	b5	0	0	HDMI	enable(1)
	b6	0	0	Ext. HV input	without HV input(0) / with HV input(1)
	b7	0	0	PC	enable(1)
option7		0	08		
	b0	0	0	Asia	Asia(1),europe(0)
	b1	0	0	Australia	not use
	b2	0	0	Ireland/India	Ireland(1)
	b3	0	1	UK/Korea	UK(1)
	b4	0	0	Lang1	not use
	b5	0	0	Lang2	not use
	b6	0	0	Lower POS	not use
	b7	0	0	Owner ID	not use

		PA50E	PE50B		
option8		78	00	**Euro option**	
	b0	0	0	ACI all country	ACI enable(1), only Netherlands(0)
	b1	0	0	ACI auto MP	ACI auto multi package enable (1)
	b2	0	0	ACI offset	ACI offset for VCR prog. enable(1)
	b3	1	0	Power up EC-Mode	Power on EC enable (1)
	b4	1	0	AVLink	Q-Link off selectable in menu (1)
	b5	1	0	Volume correction	TV Volume coorrection enable (1)
	b6	1	0	MPX/NICAM display	Display NICAM (0), Display MPX (1)
	b7	0	0	Albd Reset Off	enable(1)
option9		00	00		
	b0	0	0	CH Plan	ASIA / M.E. / HK/UK / CHINA(1)
	b1	0	0		NZ/INDNES(1)
	b2	0	0		AUSTRALIA(1)
	b3	0	0		E.EUROPE(1)
	b4	0	0		SPECIAL(1)
	b5	0	0		AMERICA(1)
	b6	0	0		CATV(1)
	b7	0	0		JAPAN(1)
option10		00	00		
	b0	0	0	NICAM priority	ASIA/M.E.(1)
	b1	0	0		HK/UK(1)
	b2	0	0		CHINA(1)
	b3	0	0		NZ/INDN(1)
	b4	0	0		AUSTRA(1)
	b5	0	0		E.EURO(1)
	b6	0	0		SPECIAL(1)
	b7	0	0	free	
option11		80	80	**Additional**	
	b0	0	0	Remocon Type	Delux(1) / Leader(0)
	b1	0	0	Environment AI (PDP)	enable, with viewing mode auto (1) / disable, without viewing mode auto(0)
	b2	0	0	WSS14:9 off	WSS 14:9 off (1)
	b3	0	0	IRD Reset Check	ON(1) / OFF(0)
	b4	0	1	IRD Polling Check	ON(1) / OFF(0)
	b5	0	0	Contrast AI	enable(1) * LCD Only
	b6	0	0	Exdac4 Slave address	0x9e(1) / 0x98(0) * PDP Only
	b7	1	1	PanelMCUNew	NewMCU(1)/OldMCU(0) :: temp * PDP Only

10 Adjustment Procedure

10.1. Driver Set-up

10.1.1. Item / Preparation

1. Input an APL 100 % white signal.
2. Set the picture controls: -

   Picture mode: Normal

   White balance: Cool

   Aspect: 16:9

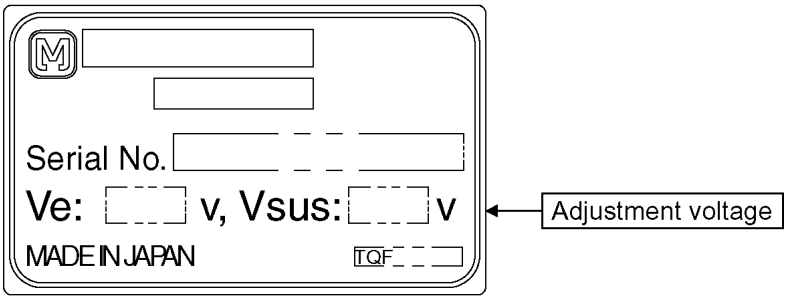
10.1.2. Adjustments

Adjust driver section voltages referring the panel data on the panel data label.

Name	Test Point	Voltage	Volume	Remarks
Vsus	TPVSUS (SS)	175V ± 1V	R628 (P)	*
Ve	TPVE (SS)	156V ± 1V	VR6074 (SS)	*
Vset	TPVSET (SC)	232V ± 6V	Fixed	
Vad	TPVAD (SC)	-90V ± 1V	VR6477 (SC)	
Vscn	TPVSCN (SC)	Vad+120V ± 3V	Fixed	
Vda	TPVDA (SS)	67V ± 1V	R665 (P)	
PFC	C448 (+)(-)	395V± 0.5V	R443 (P)	
Vdat	C557 (+)(-)	67V± 0.1V	R665 (P)	load current : 0.4A
Vsus	TPVsus	188V± 1V	R628 (P)	load current : 2.0A

*See the Panel label.

Panel Label information

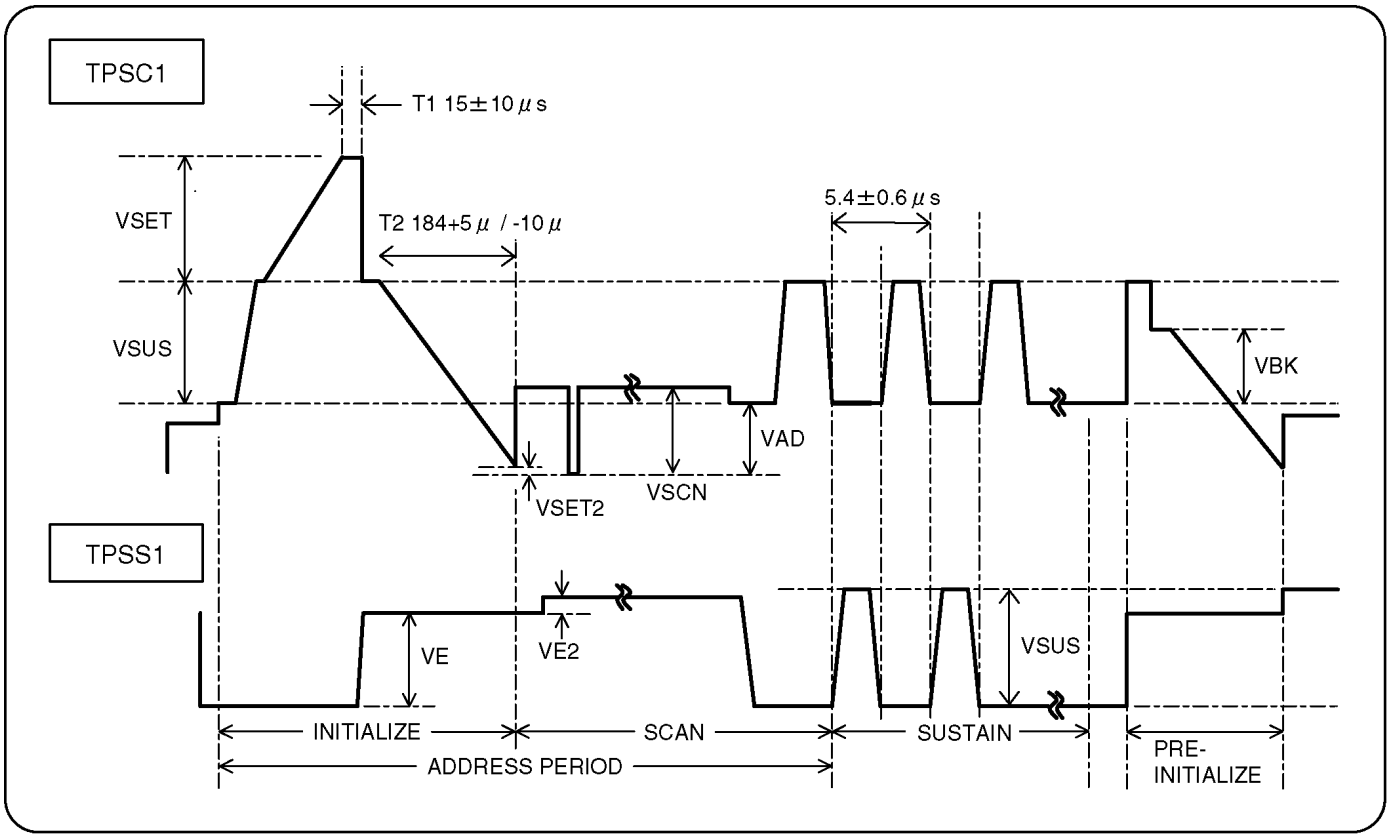


10.2. Initialization Pulse Adjust

1. Input a Cross hatch signal.
2. Set the picture controls: -
   Picture mode: Normal
   White balance: Cool

Adjust the indicated test point for the specified wave form.

	Test point	Volume	Level
T1	TPSC1 (SC)	---	15 ± 10µ Sec
T2	TPSS1 (SS)	VR6557 (SC)	184 + 5µ / - 10µ Sec



10.3. P.C.B. (Printed Circuit Board) exchange

10.3.1. Caution

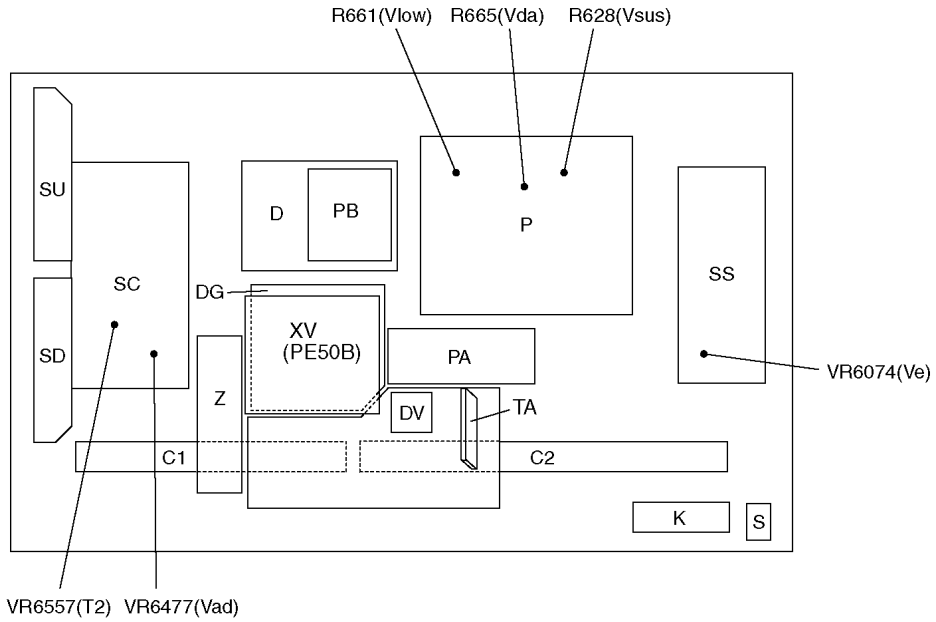
1. To remove P.C.B. , wait 1 minute after power was off for discharge from electrolysis capacitors.

10.3.2. Quick adjustment after P.C.B. exchange

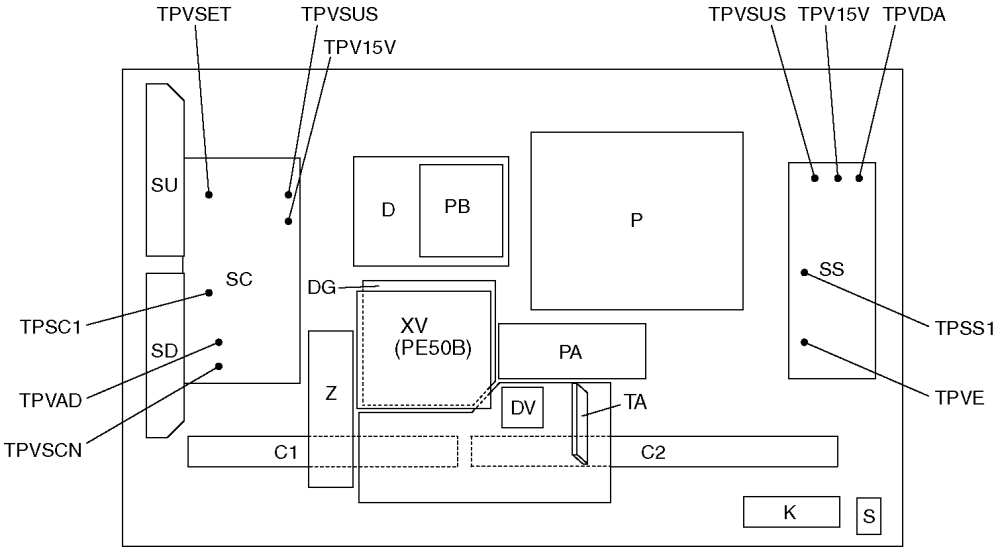
P.C.B.	Name	Test Point	Voltage	Volume	Remarks
P Board	Vsus	TPVSUS (SS)	175V ± 1V	R628 (P)	*
	Vda	TPVDA (SS)	67V ± 1V	R665 (P)	
	PFC	C488 (+) (-) (P)	395V ± 0.5V	R443 (P)	
	Vdat	C577 (+) (-) (P)	67V ± 0.1V	R665 (P)	load current : 0.4A
	Vsus	TPVSUS (SS)	188V ± 1V	R628 (P)	load current : 2.0A
SC Board	Vad	TPVAD (SC)	-90V ± 1V	VR6477 (SC)	
	Vset	TPVSET (SC)	232V ± 6V	Fixed	
	Vscn	TPVSCN (SC)	Vad + 120 ± 3V	Fixed	
SS Board	Ve	TPVE (SS)	156V ± 1V	VR6074 (SS)	*
D, DG Board	White blance, Pedestal and Sub brightness for NTSC, PAL, HD, PC and 625i signals				

*See the Panel label.

10.4. Adjustment Volume Location



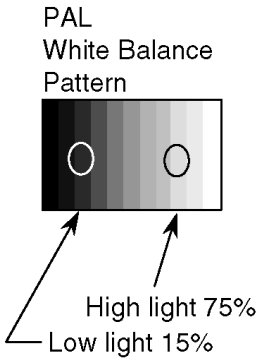
10.5. Test Point Location



11 Adjustment

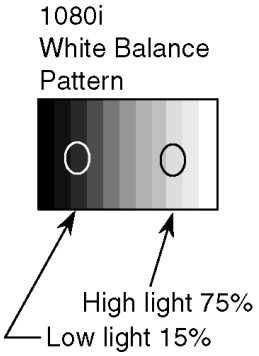
11.1. PAL panel white balance adjustment

Instrument Name	Connection	Remarks
・W/B pattern ・Color analyzer (Minolta CA-100 or equivalent)	RF input Panel surface	User setting: Normal

Procedure	Remarks
・Ensure aging is adequate (Longer than 15min.) ・Make sure the front panel to be used on the final set is fitted. ・Make sure a color signal is not being shown before adjustment. ・Put the color analyzer where there is little color variation. 1. Display the white balance pattern. 2. Check that the color balance is "cool". 3. Enter the <Service-Menu1> mode. 4. Select "G-CUTOFF" item, using the color-key "Red" or "Green", and set to "128", using the color-key "Yellow" or "Blue". Also, "B-CUTOFF" and "R-CUTOFF" set to "128" 5. Set "G-DRIVE" at "224"(37/42"). 6. Touch the signal receiver of color analyzer to the highlight window´s center, and adjust B drive and R drive so x, y become the "Color balance Cool" in the below table. 7. Set "ALL-DRIVE" to "252". 8. Set colorbalance to "Normal". 9. Fix G cutoff , B cutoff and R cutoff at "128". 10. Fix G drive at "224"(37/42"). 11. Adjust B drive and R drive so the highlight window´s x, y become the "Color balance "Normal" in the below table. 12. Set "ALL-DRIVE" to "252". 13. Set color balance to "Warm". 14. Set G cutoff, B cutoff and R cutoff to "128". 15. Set G drive to "224"(37/42"). 16. Adjust B drive and R drive so the highlight window´s x, y become the "Color balance Warm" shown in the below table. 17. Set "ALL-DRIVE" to "252".	Picture menu : Dynamic ASPECT : 16:9 ・Highlight section Signal amplitude 75% 

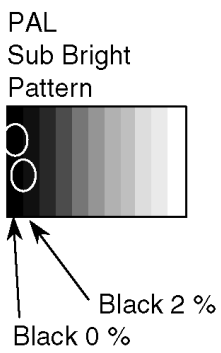
11.2. 1080i white balance adjustment

Instrument Name	Connection	Remarks
・1080i W/B pattern ・Color analyzer (Minolta CA-100 or equivalent)	Comonent terminal Panel surface	User setting: Normal

Procedure	Remarks
・Ensure aging is adequate (Longer than 15min.) ・Make sure the front panel to be used on the final set is fitted. ・Make sure a color signal is not being shown before adjustment. ・Put the color analyzer where there is little color variation. 1. Display the white balance pattern. 2. Check that the color balance is "cool". 3. Enter the <Service-Menu1> mode. 4. Select "G-CUTOFF" item, using the color-key "Red" or "Green", and set to "128", using the color-key "Yellow" or "Blue". Also, "B-CUTOFF" and "R-CUTOFF" set to "128" 5. Set "G-DRIVE" at "224"(37/42"). 6. Touch the signal receiver of color analyzer to the highlight window´s center, and adjust B drive and R drive so x, y become the "Color balance Cool" in the below table. 7. Set "ALL-DRIVE" to "252". 8. Set colorbalance to "Normal". 9. Fix G cutoff , B cutoff and R cutoff at "128". 10. Fix G drive at "224"(37/42"). 11. Adjust B drive and R drive so the highlight window´s x, y become the "Color balance "Normal" in the below table. 12. Set "ALL-DRIVE" to "252". 13. Set color balance to "Warm". 14. Set G cutoff, B cutoff and R cutoff to "128". 15. Set G drive to "224"(37/42"). 16. Adjust B drive and R drive so the highlight window´s x, y become the "Color balance Warm" shown in the below table. 17. Set "ALL-DRIVE" to "252".	Picture menu: Dynamic ASPECT:16:9 ・Highlight section Signal amplitude 75%  * The Color balance COOL differs from Japanese model values.

11.3. Sub bright adjustment

Instrument Name	Connection	Remarks
1. PAL signal generator (or RF)	Connect to the input terminal	User setting: Normal

Procedure	Remarks
・Color balance adjustment is finished for each signal. ・Do adjustments in a dark room. 1. Display the pattern for adjusting subbright from video input. 2. Use "Sub-Bright" in the <Sevice-Menu1> mode to adjuct so the top part of the step section in the below diagram faintly shows up and the middle fades away. 	Picture menu: Dynamic Color balance: Normal ASPECT: 16:9 * If using RF ch.E04, (Sub-Bright test pattern), adjust so the 6th section shows up and the 7th fades away.

11.4. ABL adjustment

Instrument Name	Connection	Remarks
1. HD signal emitter (Color bar signal) 2. Wattmeter	COMPONENT input terminal Connect the AC power of the adjustment set to the wattmeter.	

Procedure	Remarks
・Make sure the set is aged for 30 minutes or more before adjustment. (Do not switch off during or after aging.) ・Voltage 230V 50Hz (variation within 1%) ・Volume at minimum and screen size at "16:9" Setting Component input, dynamic, standard 1. Connect the set´s AC power to the wattmeter. 2. Input the color bar. 3. Select the "APL MULT" item in the Serivice1. 4. Adjust APL MULT so the set´s power consumption is TH-42PA50E 309 ± 10W TH-42PE50B 317 ± 10W TH-37PA50E 239 ± 10W TH-37PE50B 247 ± 10W 1. The initial data are 0x25 for 37/42SD (A0-0626) 0x1E for 37HD (A0-0426) 0x24 for 42HD (A0-0826) 0x1D for 50HD (A0-0A26) 2. The power and data are in reverse relationship (Lower the data to raise the power.) ・Raising direction (↑):20 → 1F ・Lowering direction (↓):20 → 1A (↑):20 → 1F (↓):20 → 1A	According to the line condition,100V can be used

12 Hotel mode

1. Purpose

   Restrict a function for hotels.

2. Access command

   - Enter to the Service 2 Mode.
   - Press Status button on remote control and entry to the EAROM EDITOR Mode.
   - Set the data of EEPROM(ADDRESS 140) to 80.
   - Press the OK button to memorize the data.



   Push the Power switch(button) off/on the set(the remote control) to turn the set off/on.

   It can be made Hotel mode.

3. Exit command

   - First, set the data of EEPROM(ADDRESS 140) to 00.

     Next, Push the Power switch(button) off/on the set(the remote control) to turn the set off/on.

     Then, it is no longer hotel mode.

4. Access command to the Hotel mode setup menu

   - <Prerequisite> : It is conditions that the data of EEPROM(ADDRESS 140) is 80.

     In order to display the Hotel mode setup menu, please enter the following command **(within 2 second)**.

     [TV]:down + [REMOTE]:TV/AV(3 times)

     Then, the Hotel mode setup menu is displayed.



5. Explain the Hotel mode setup menu

CAUTION

This setup is not valid, unless data of EEPROM(ADDRESS 160) will be C0, even if each settings were done.

item	Function
Initial INPUT	Select input signal modes. Set this signal, each time power is switched on. <Selection> : Off/TV/AV1/AV2/AV2S/AV3/Av3S/AV4/Av4S/AV4C/PC ・Off: give priority to a last memory. However, Euro model is compulsorily set to TV. ・AVnS/AVnC: only Euro model selectable ・PC: selectable with VGA option
Initial VOL level	Adjust output Volume. Set this volume, each time power is switched on. If the value of InitVol is changed, volume will change. However, priority is given to a last memory when InitVol is Off. When "InitVol" is larger than "MaxVol", make "InitVol" and "MaxVol" the same. <Selection/Range> : Off/0 to 100 ・Off: give priority to a last memory
Maximum VOL level	Adjust maximum volume. Set this max. volume, each time power is switched on. When "MaxVol" is smaller than "InitVol", make "MaxVol" and "InitVol" the same, if "InitVol" is not Off. <Range> : 0 to 100
Initial POS	Select programme number. Set this programme number, each time power is switched on. <Selection> : Off/0 to 99 (Euro model) ・Off: give priority to a last memory
Button lock	Select local key conditions. Set this condition, each time power is switched on. <Selection> : Off/SETUPMENU/All ・Off: altogether valid ・SETUP: restrict F-key selection (Tuning guide(menu) can not be selected.) ・MENU: restrict F-key selection (only Volume/Mute can be selected.) ・All: altogether invalid.
Remote lock	Select remote control key conditions. Set this condition, each time power is switched on. <Selection> : Off/SETUP/MENU ・Off: altogether valid ・SETUP: only Setup menu is invalid ・MENU: Picture/Sound/Setup menu are invalid

14 Block and Schematic Diagram

14.1. Schematic Diagram Notes

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacture's specified parts.

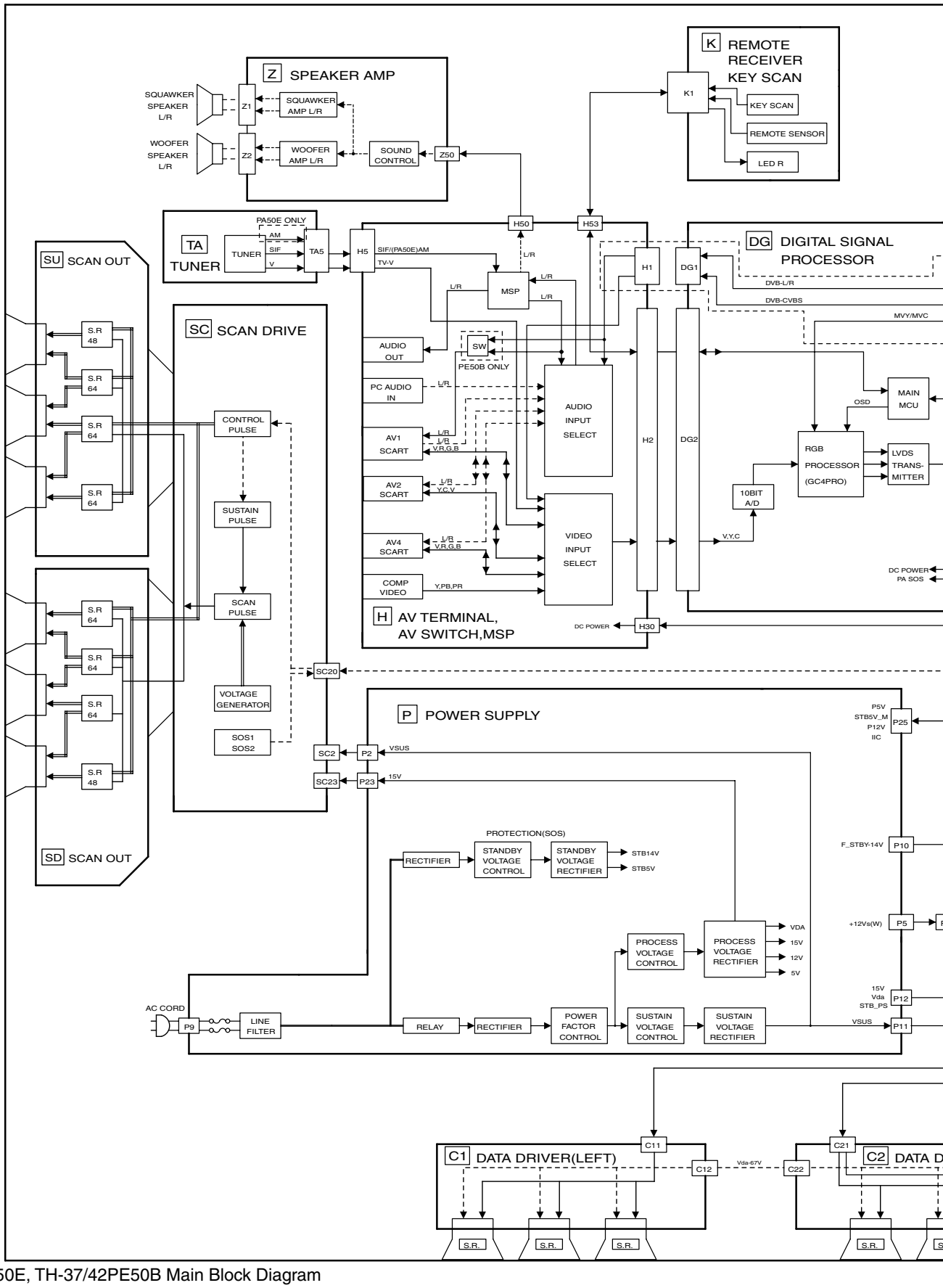
Notes:

1. **Resistor**
   Unit of resistance is OHM [Ω] (K=1,000, M=1,000,000).
2. **Capacitor**
   Unit of capacitance is μF, unless otherwise noted.
3. Coil
   Unit of inductance is H, unless otherwise noted.
4. Test Point
   ⚲ : Test Point position
5. Earth Symbol
   ⏚ : Chassis Earth (Cold) ⏚ : Line Earth (Hot)
6. Voltage Measurement
   Voltage is measured by a DC voltmeter.
   Conditions of the measurement are the following:
   Power Source AC220-240V, 50/60Hz
   Receiving Signal ..... Colour Bar signal (RF)
   All customer's controls ..... Maximum positions
7. When arrow mark (↗) is found, connection is easily found from the direction of arrow.
8. Indicates the major signal flow. : Video ➡ Audio ⇨
9. This schematic diagram is the latest at the time of printing and subject to change without notice.

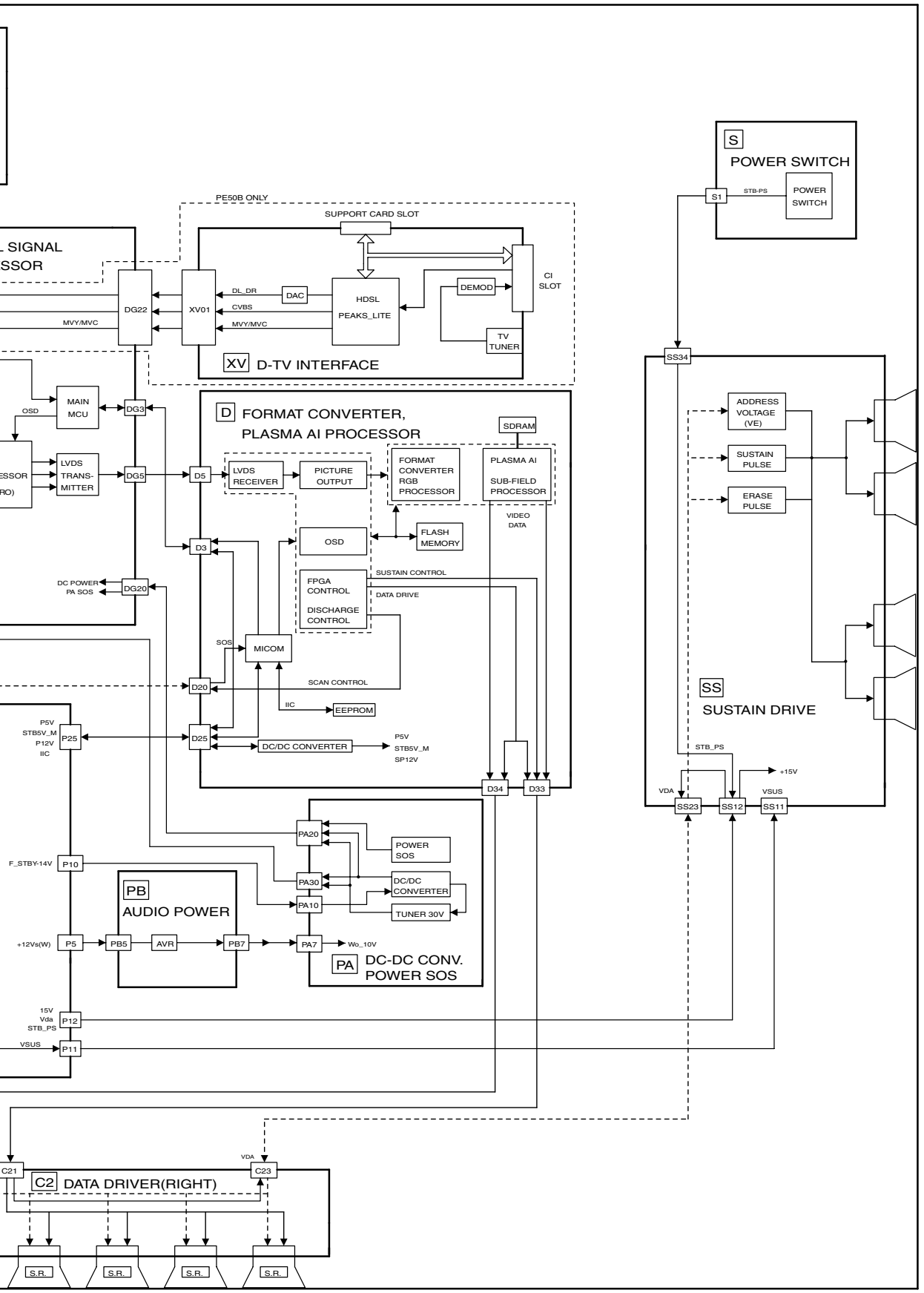
Remarks:

1. The Power Circuit contains a circuit area which uses a separate power supply to isolate the earth connection.
   The circuit is defined by HOT and COLD indications in the schematic diagram. Take the follwing precautions.
   All circuits, except the Power Circuit, are cold.
   Precautions
   a. Do not touch the hot part or the hot and cold parts at the same time or you may be shocked.
   b. Do not short- circuit the hot and cold circuits or a fuse may blow and parts may break.
   c. Do not connect an instrument, such as an oscilloscope, to the hot and cold circuits simultaneously or a fuse may blow.
      Connect the earth of instruments to the earth connection of the circuit being measured.
   d. Make sure to disconnect the power plug before removing the chassis.

14.2. Main Block Diagram

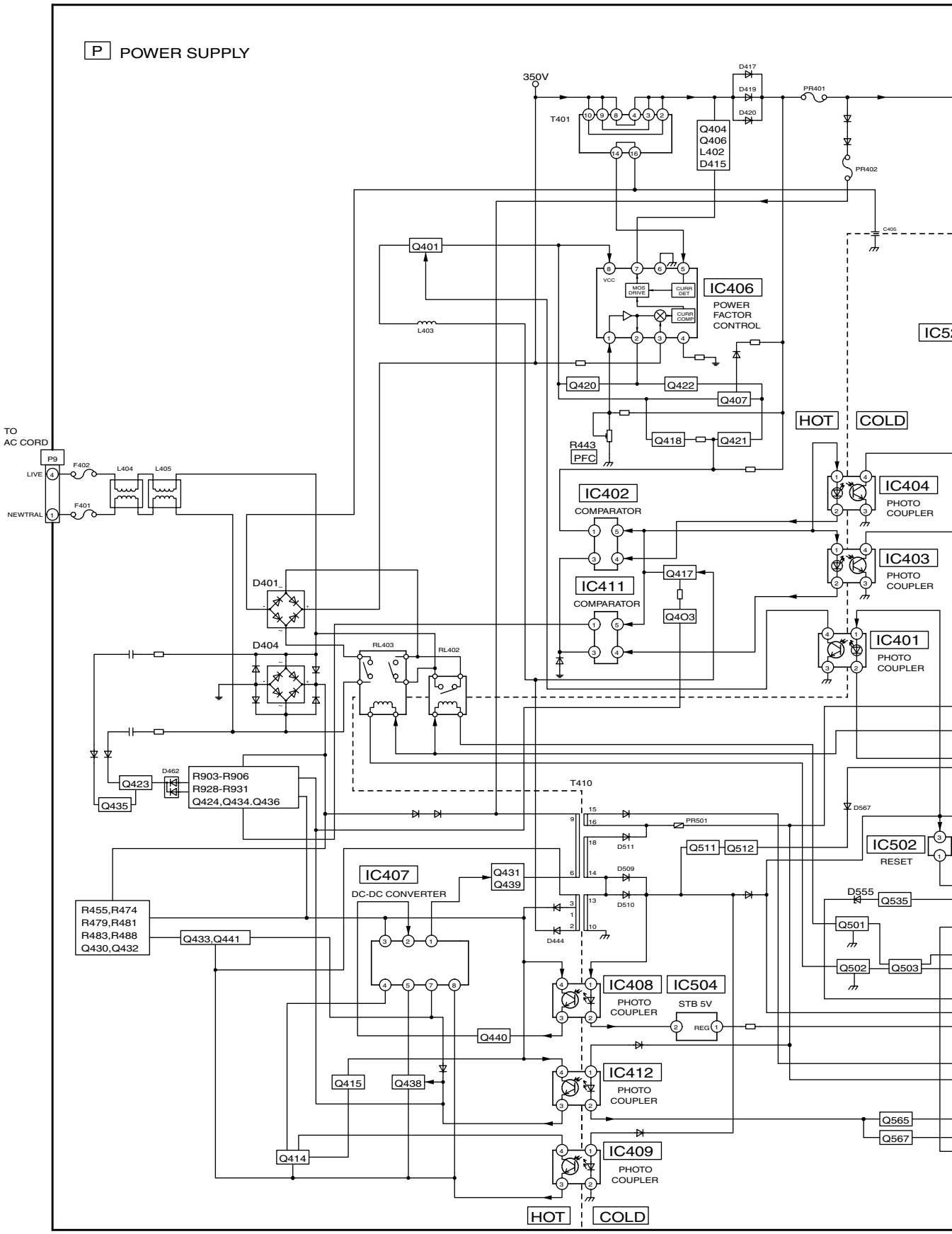


TH-37/42PA50E, TH-37/42PE50B Main Block Diagram

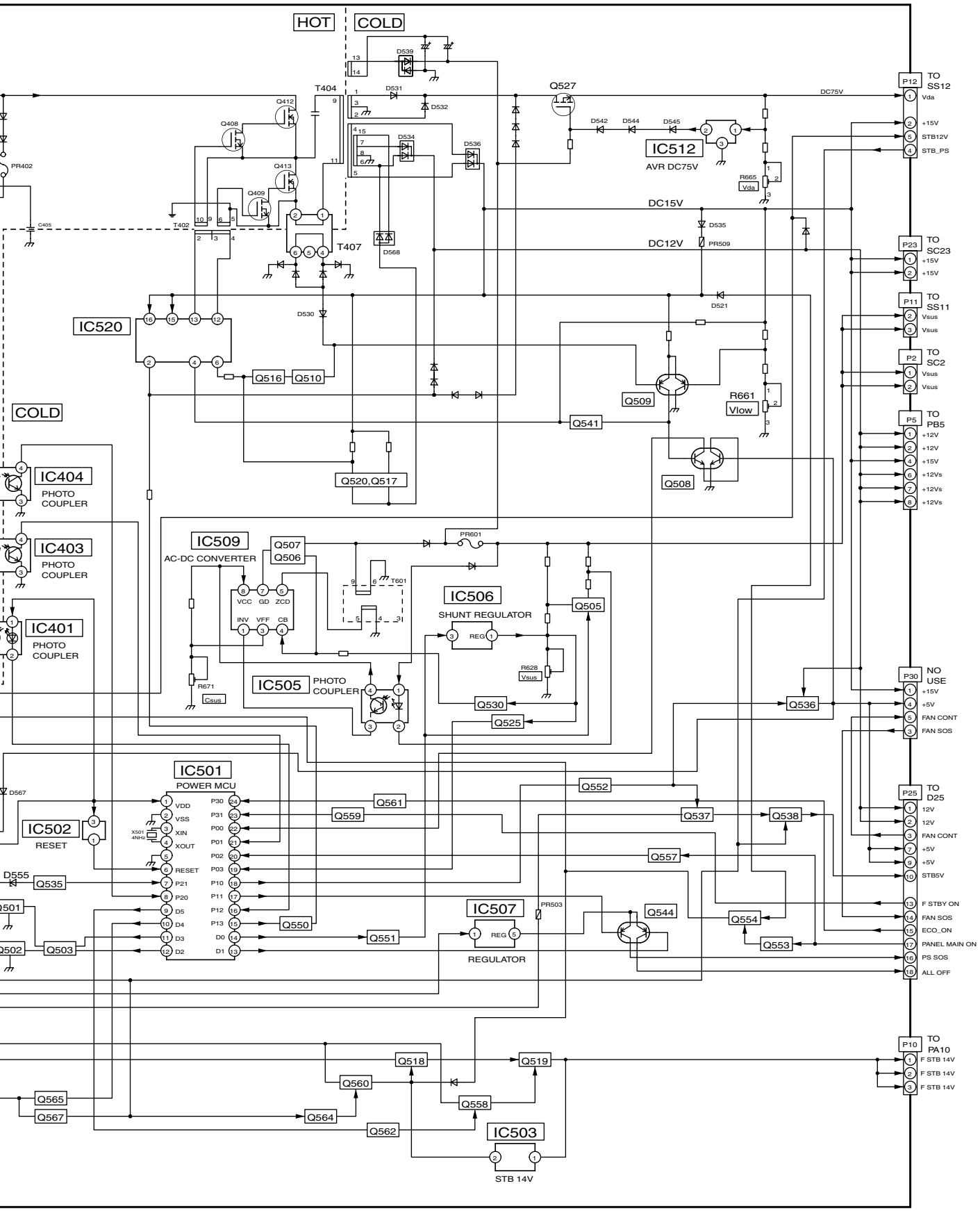


TH-37/42PA50E, TH-37/42PE50B Main Block Diagram

14.3. P-Board Block Diagram

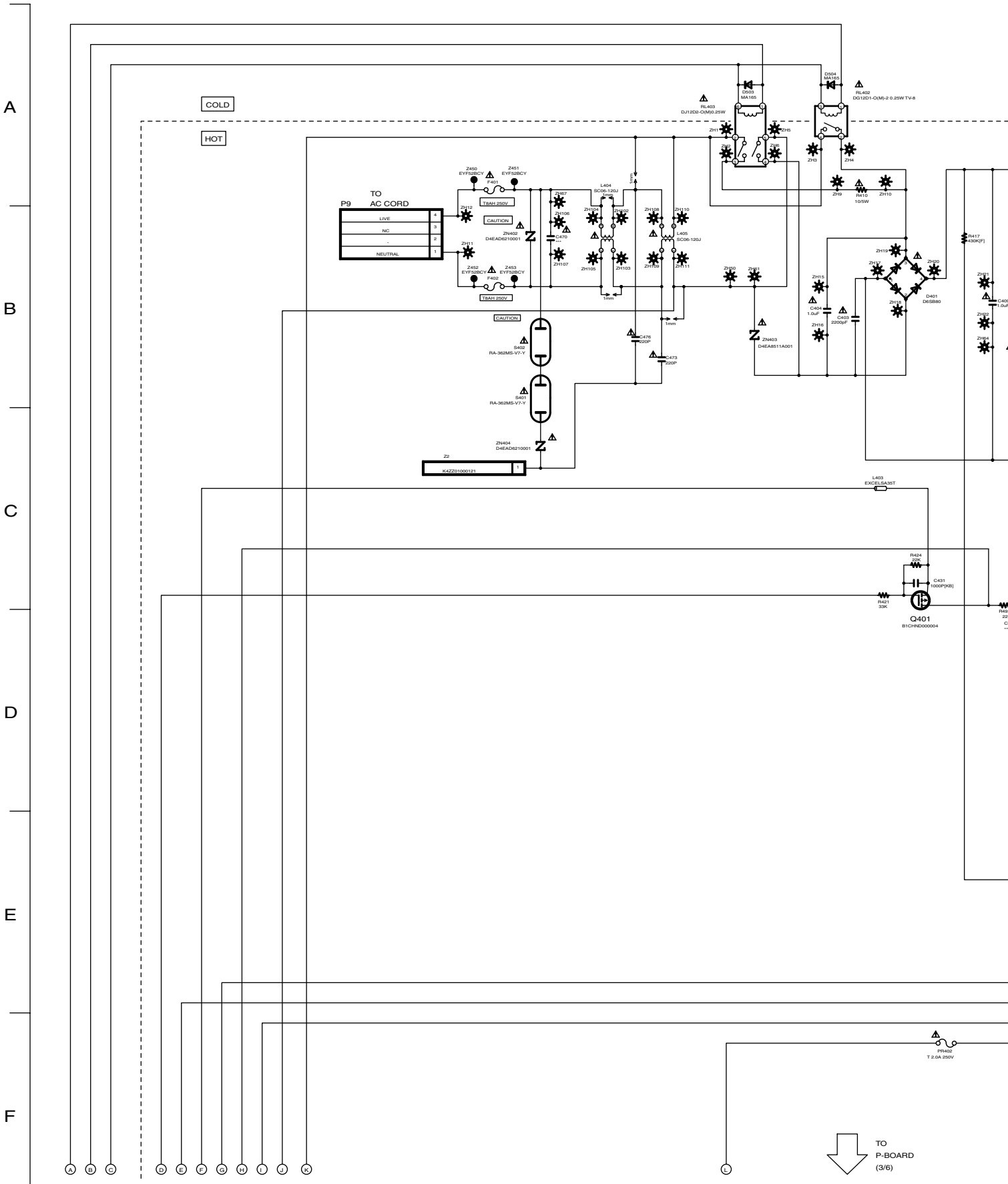


TH-37/42PA50E, TH-37/42PE50B
P-Board Block Diagram

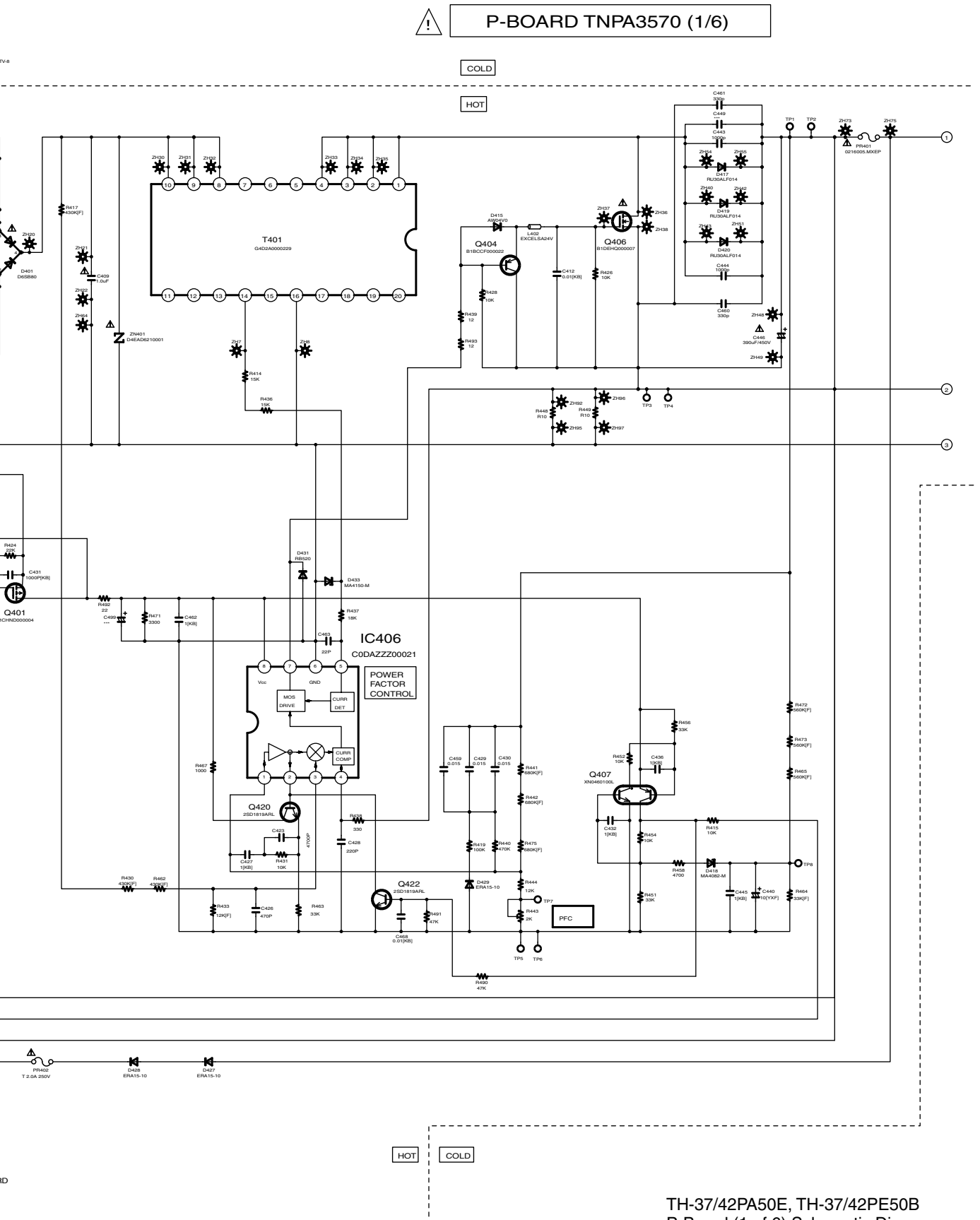


TH-37/42PA50E, TH-37/42PE50B
P-Board Block Diagram

14.4. P-Board (1 of 6) Schematic Diagram



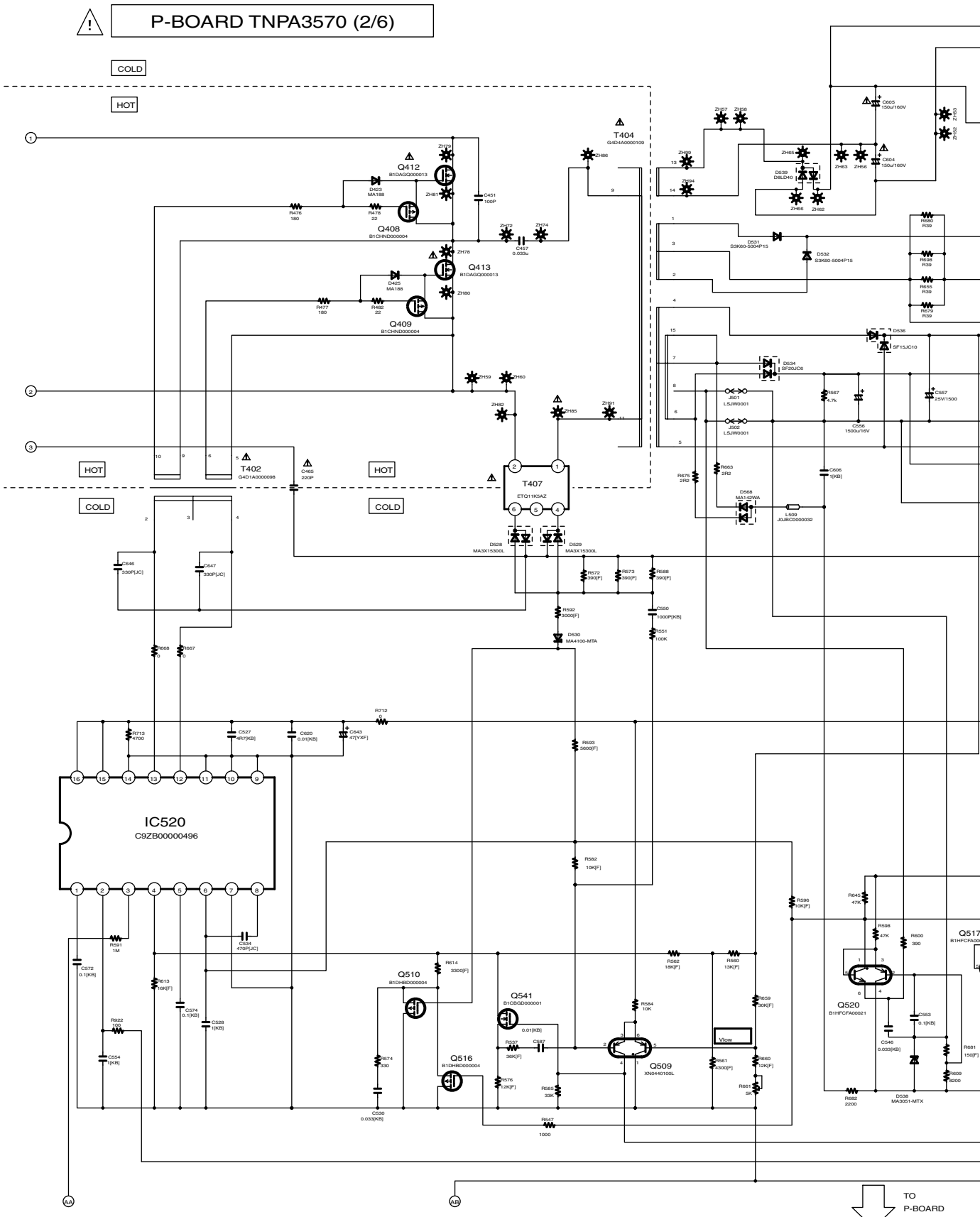
TH-37/42PA50E, TH-37/42PE50B P-Board (1 of 6) Schematic Diagram



TH-37/42PA50E, TH-37/42PE50B
P-Board (1 of 6) Schematic Diagram

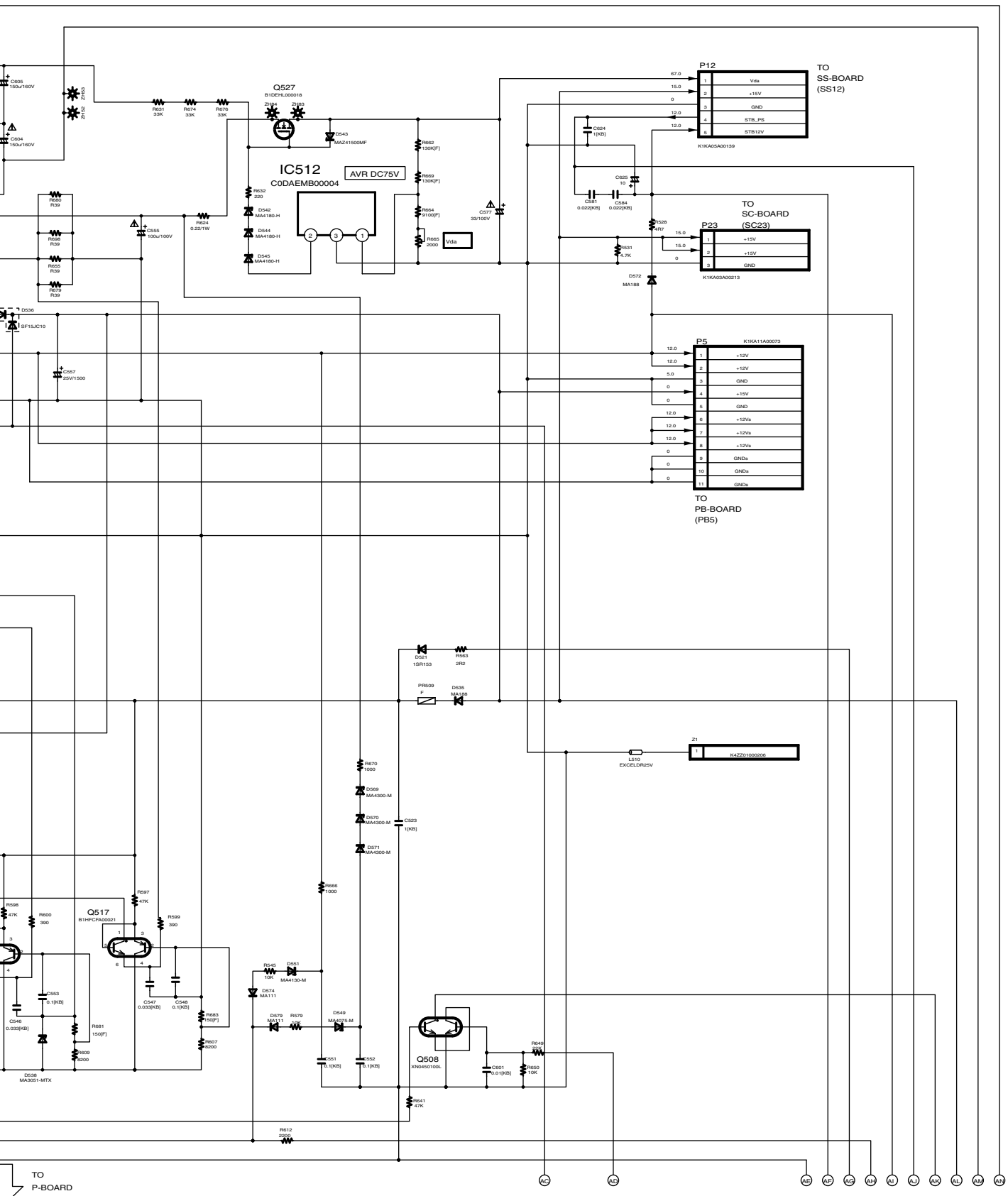
5 6 7 8 9

14.5. P-Board (2 of 6) Schematic Diagram



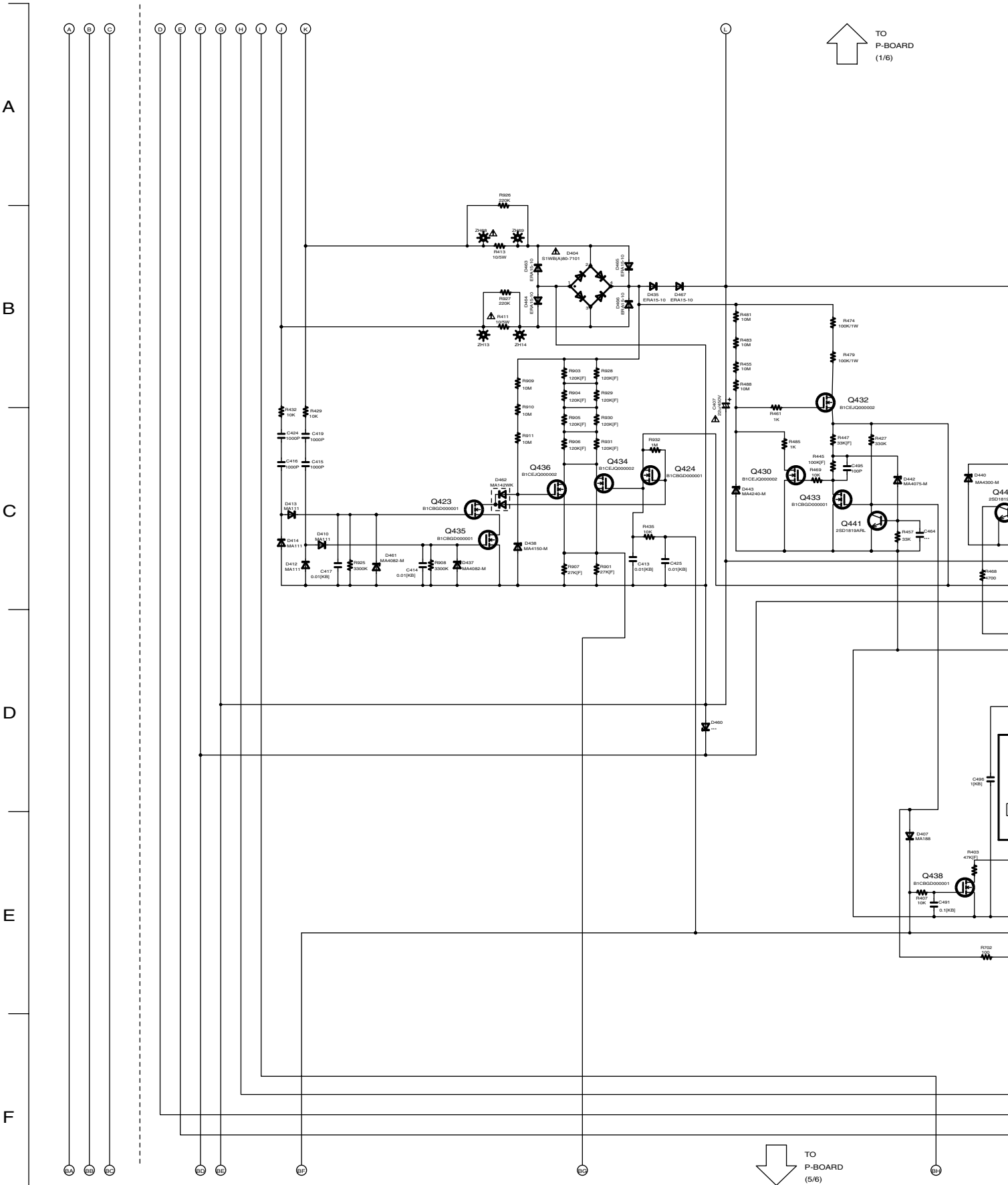
TH-37/42PA50E, TH-37/42PE50B P-Board (2 of 6) Schematic Diagram

10 11 12 13 14

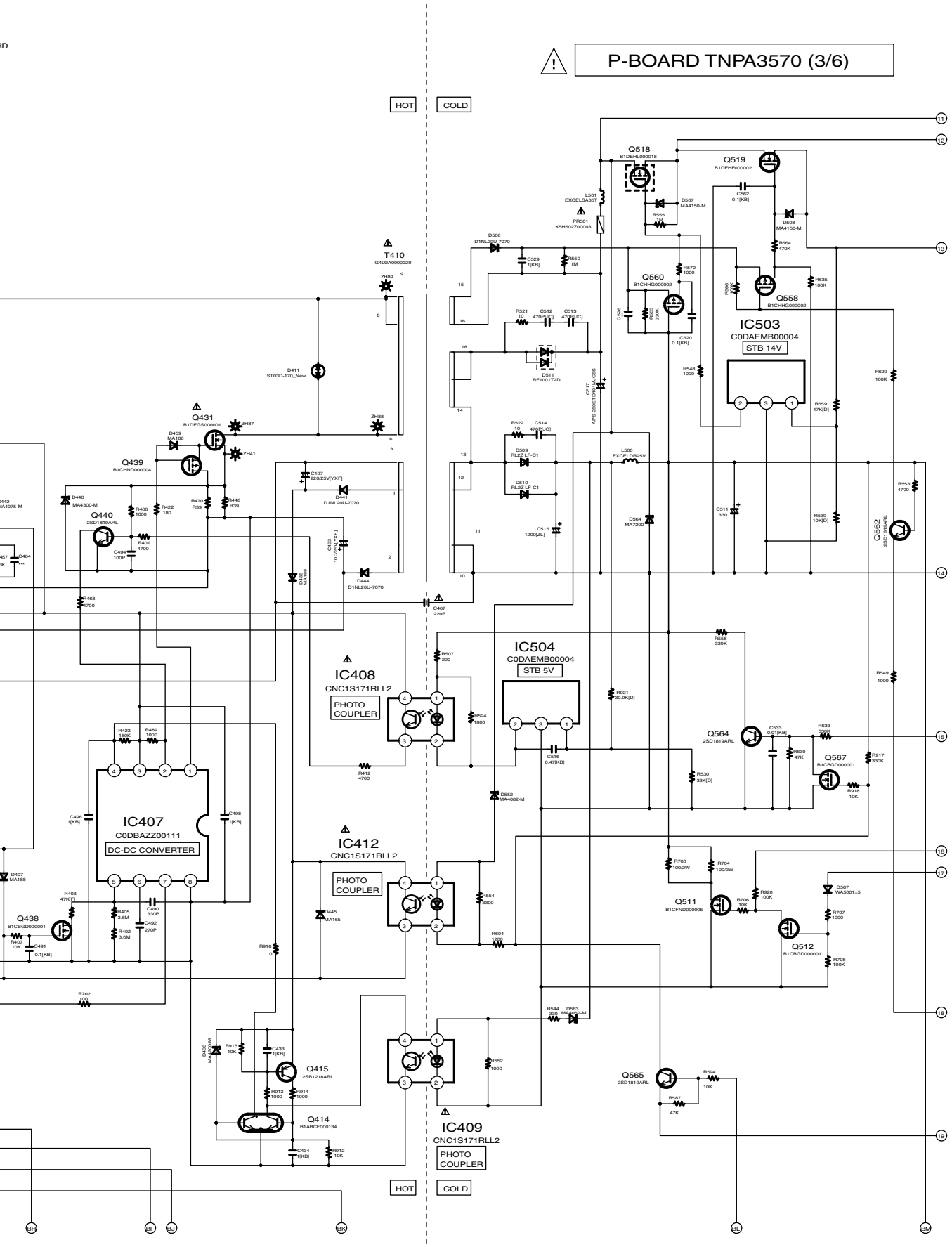


TH-37/42PA50E, TH-37/42PE50B P-Board (2 of 6) Schematic Diagram

14.6. P-Board (3 of 6) Schematic Diagram

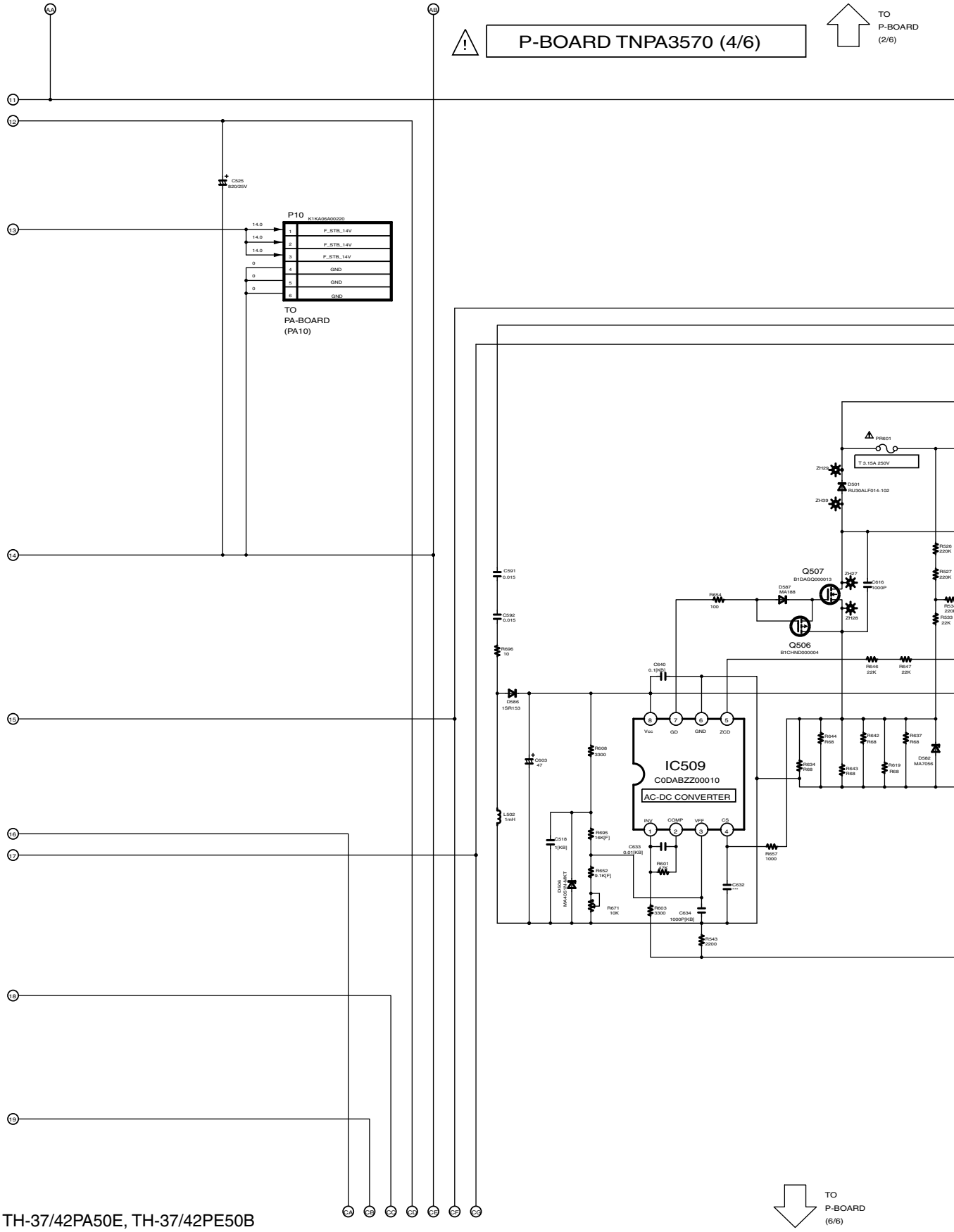


TH-37/42PA50E, TH-37/42PE50B P-Board (3 of 6) Schematic Diagram

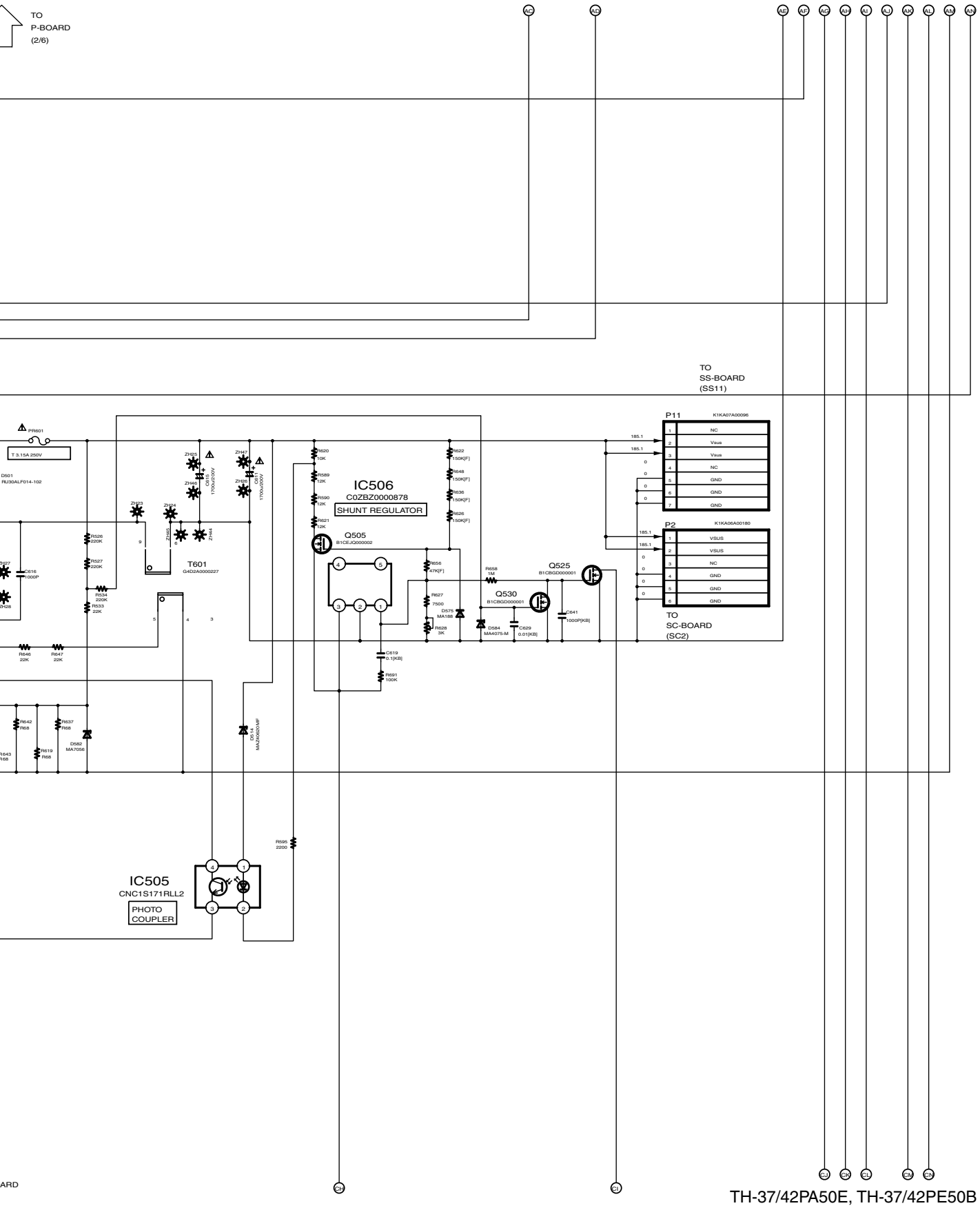


TH-37/42PA50E, TH-37/42PE50B P-Board (3 of 6) Schematic Diagram

14.7. P-Board (4 of 6) Schematic Diagram

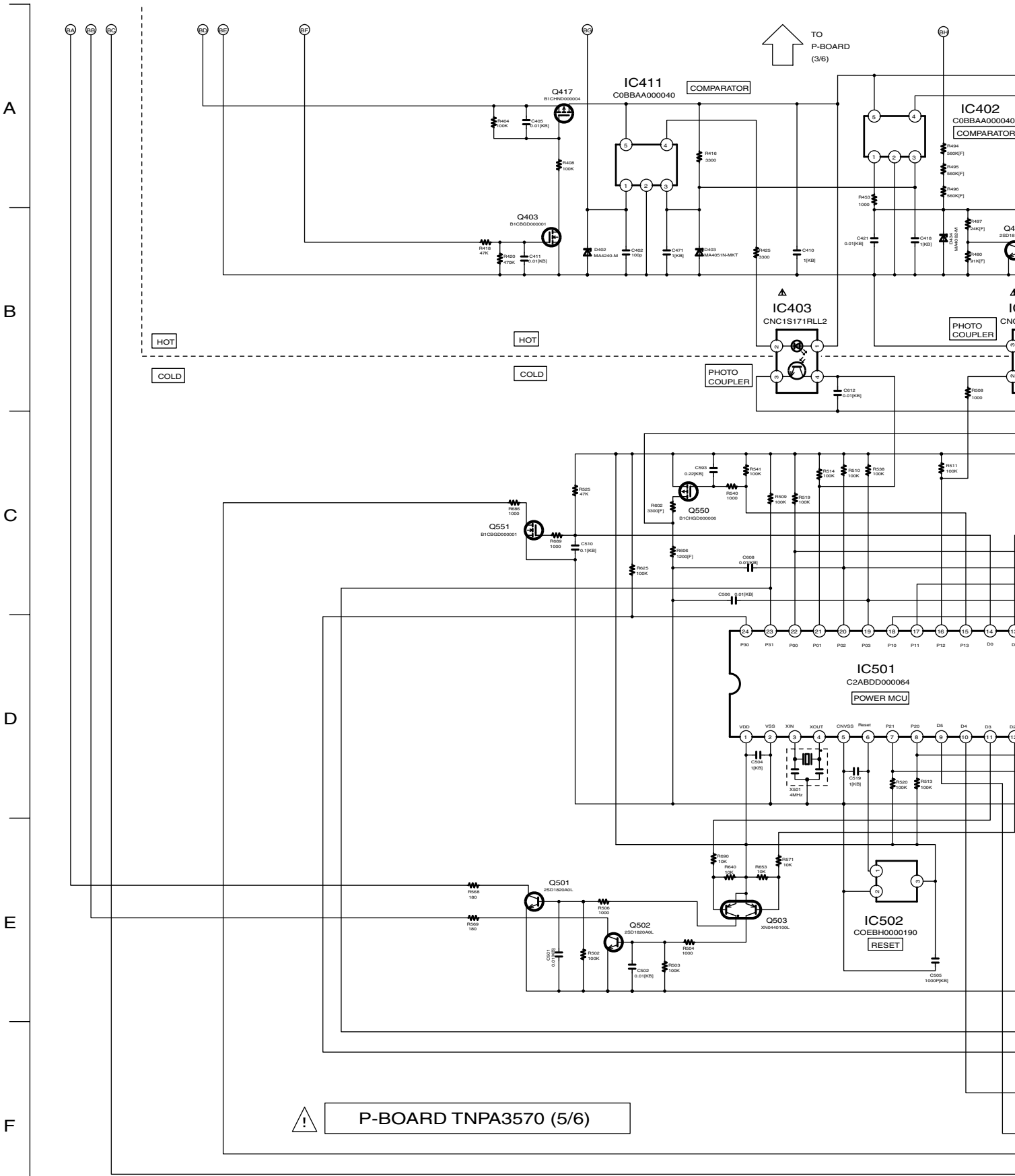


TH-37/42PA50E, TH-37/42PE50B
P-Board (4 of 6) Schematic Diagram

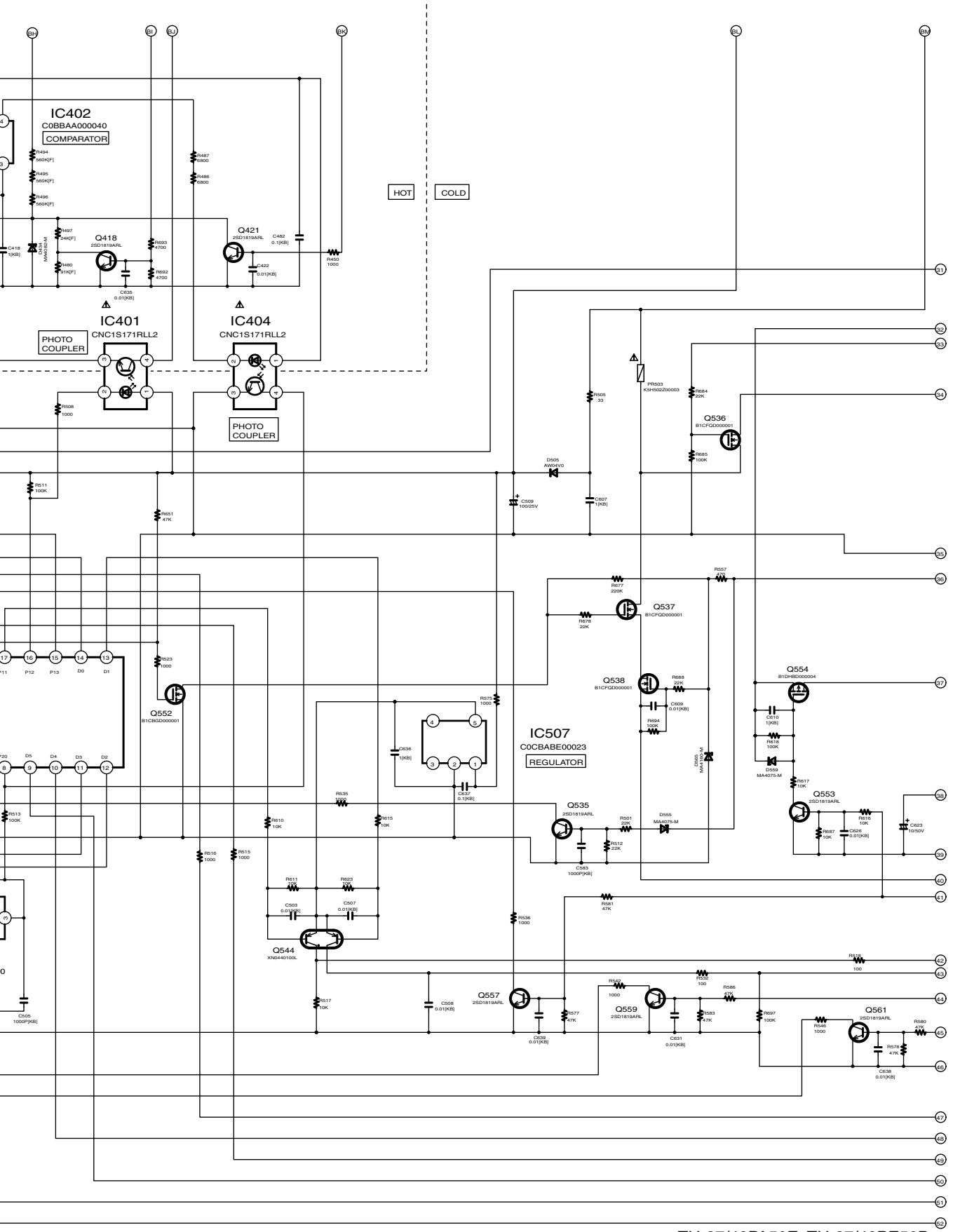


TH-37/42PA50E, TH-37/42PE50B
P-Board (4 of 6) Schematic Diagram

14.8. P-Board (5 of 6) Schematic Diagram

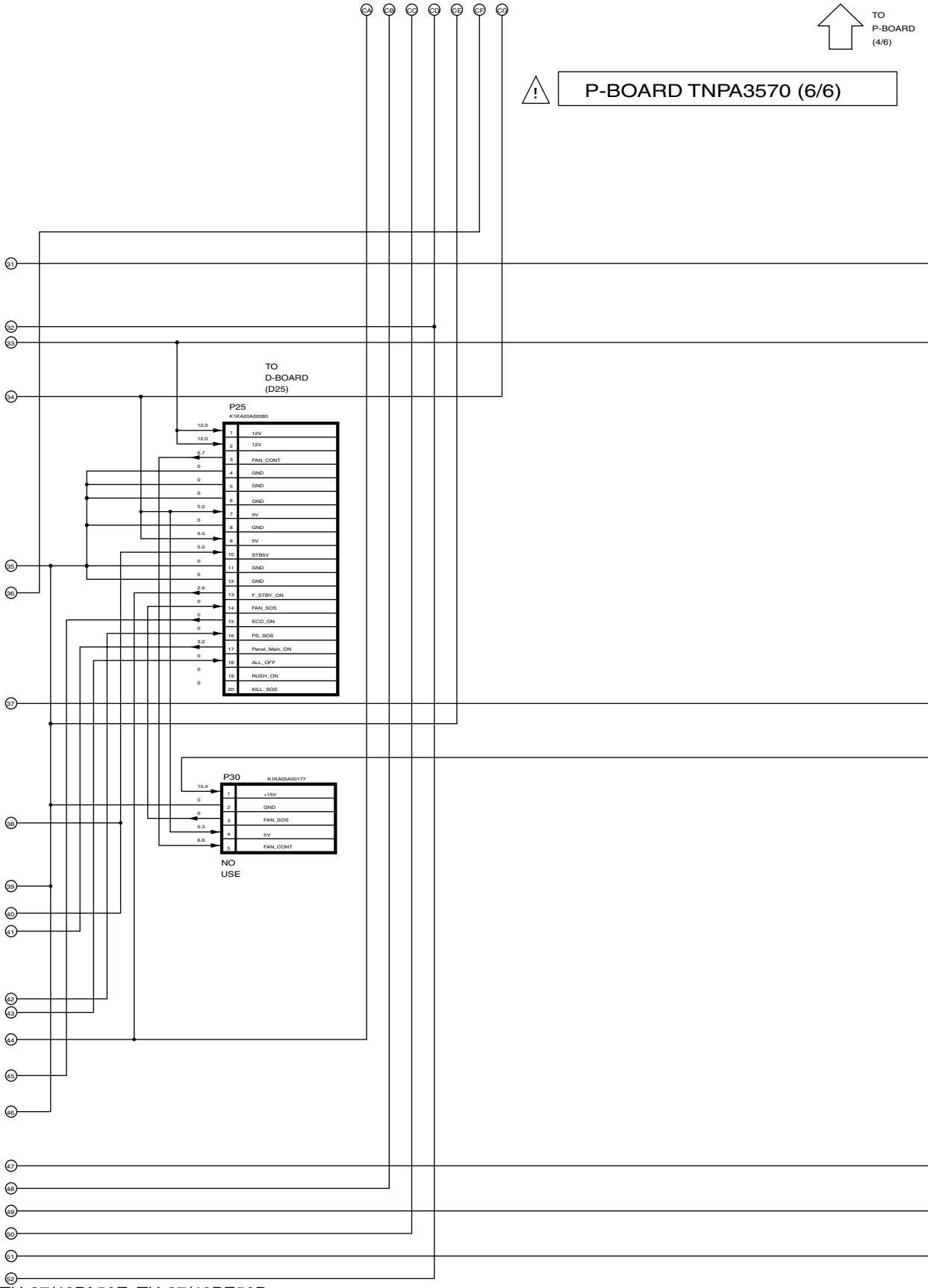


TH-37/42PA50E, TH-37/42PE50B
P-Board (5 of 6) Schematic Diagram



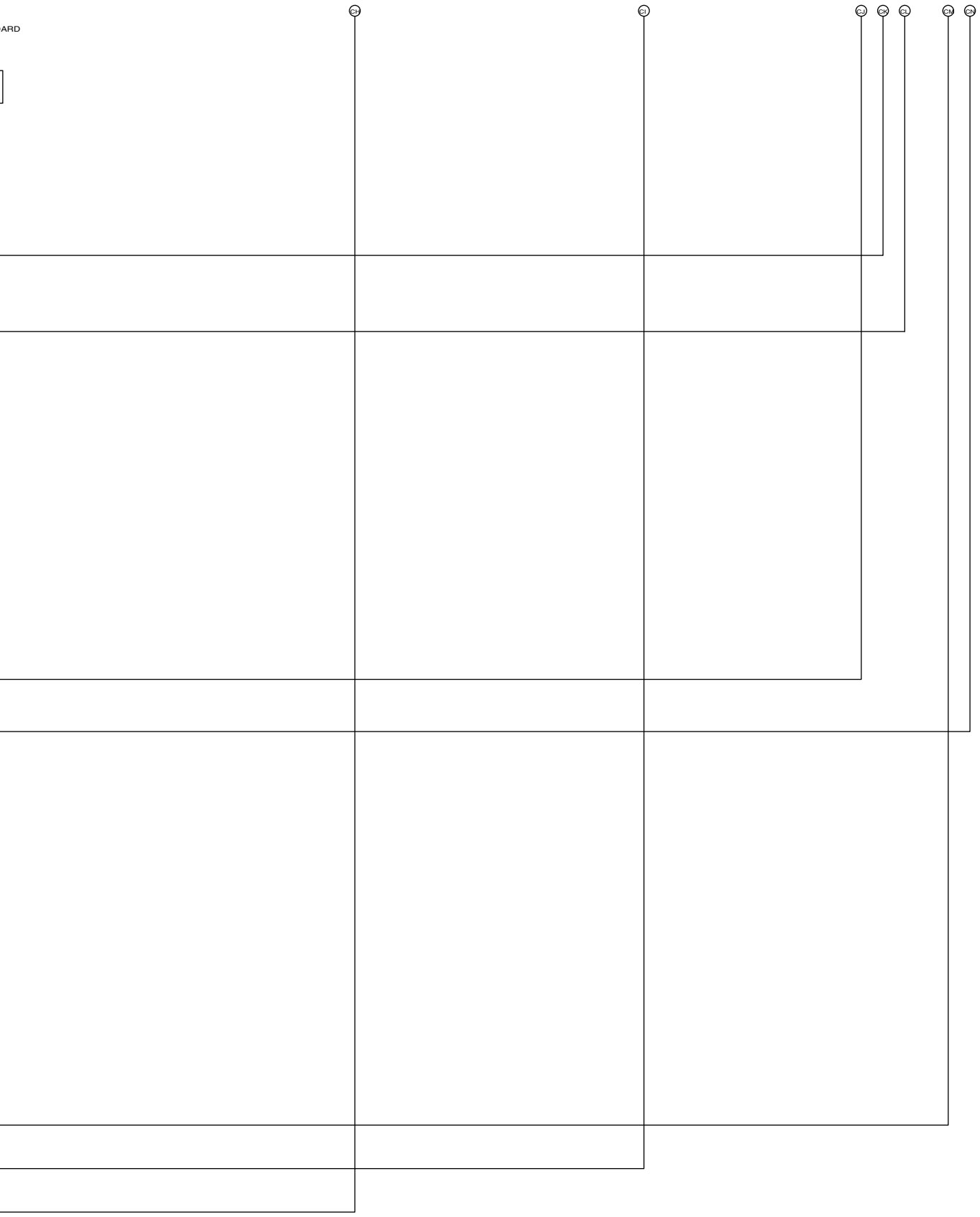
TH-37/42PA50E, TH-37/42PE50B
P-Board (5 of 6) Schematic Diagram

14.9. P-Board (6 of 6) Schematic Diagram



TH-37/42PA50E, TH-37/42PE50B
P-Board (6 of 6) Schematic Diagram

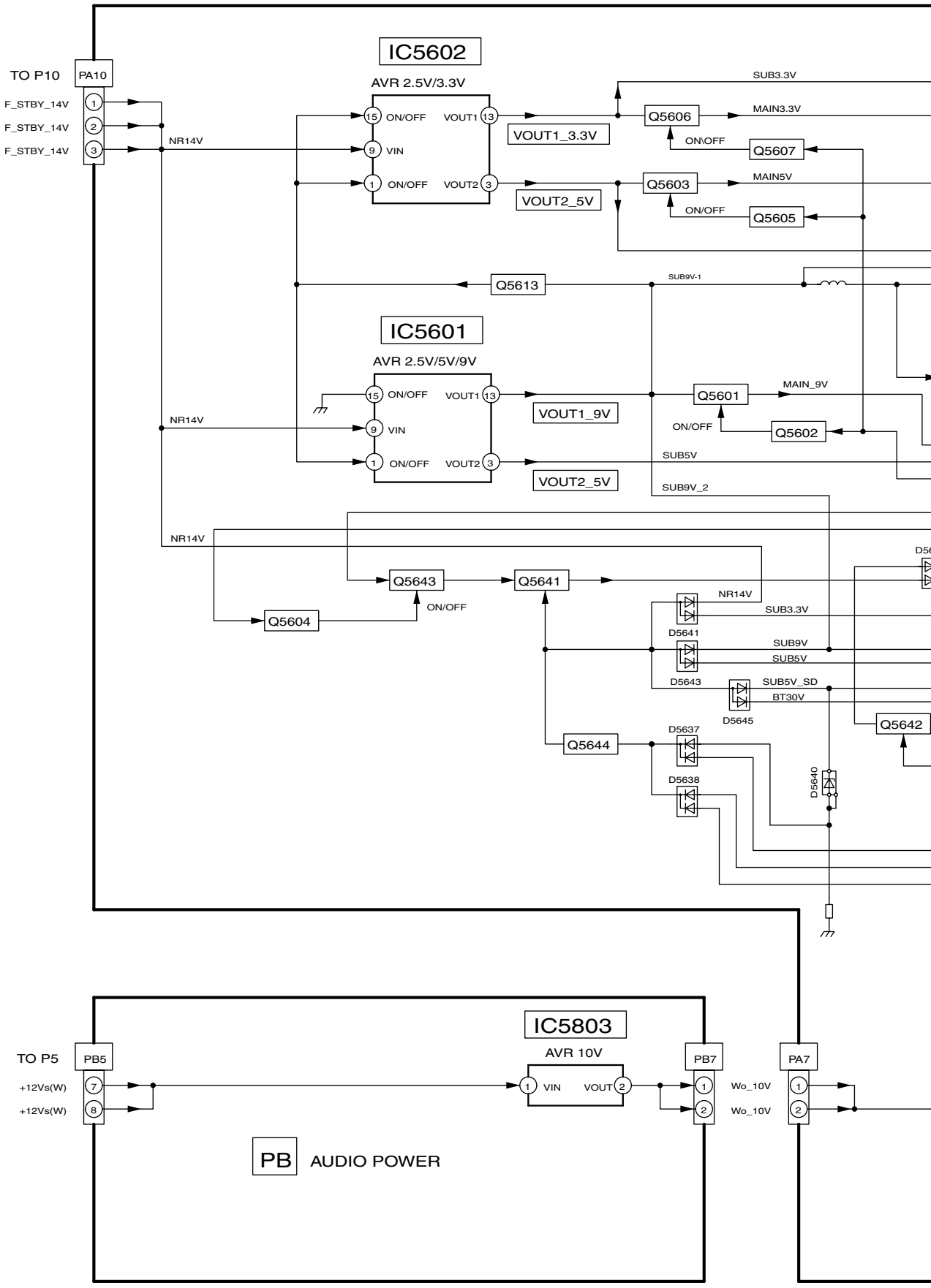
10 11 12 13 14



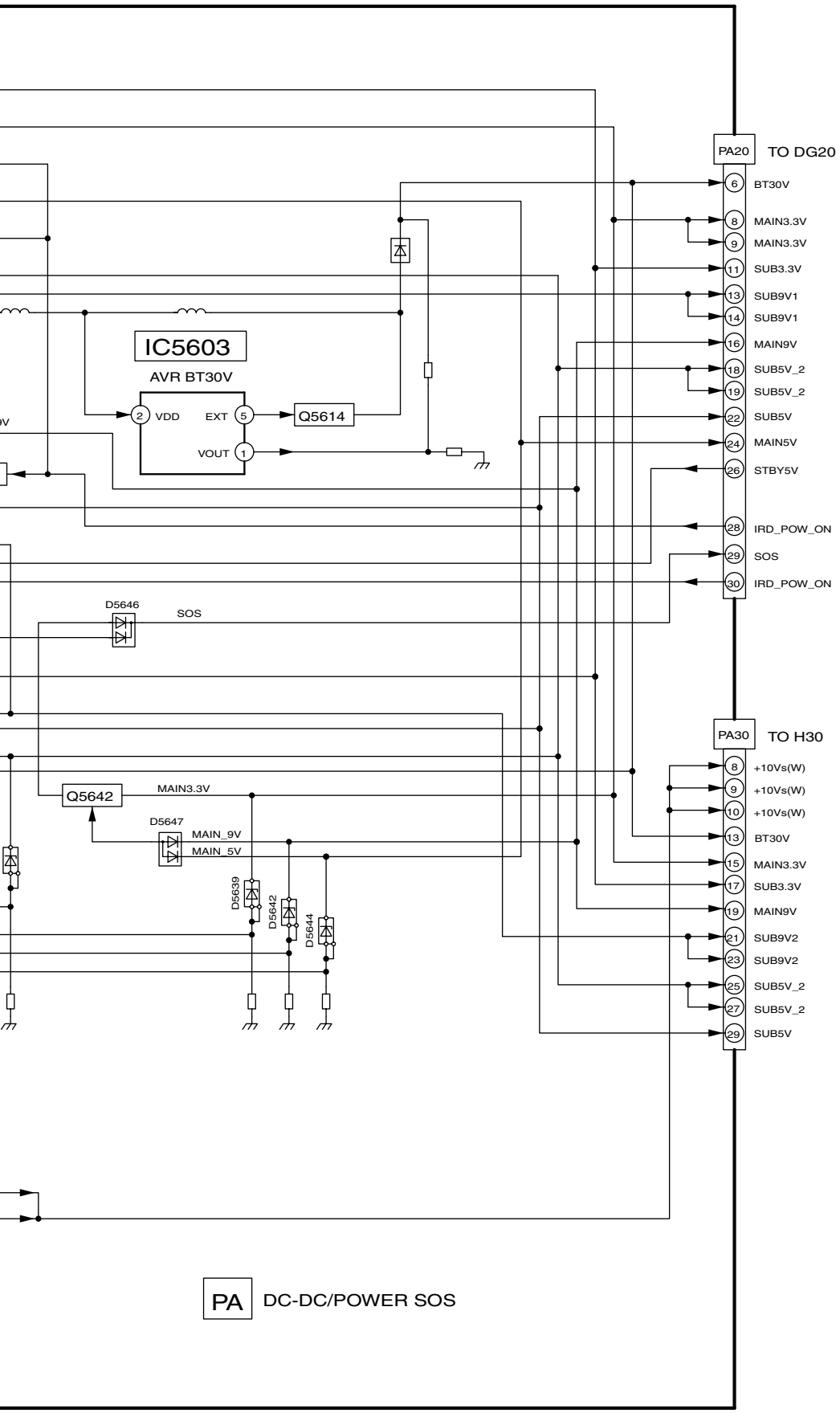
TH-37/42PA50E, TH-37/42PE50B
P-Board (6 of 6) Schematic Diagram

14 15 16 17 18

14.10. PA and PB-Board Block Diagram

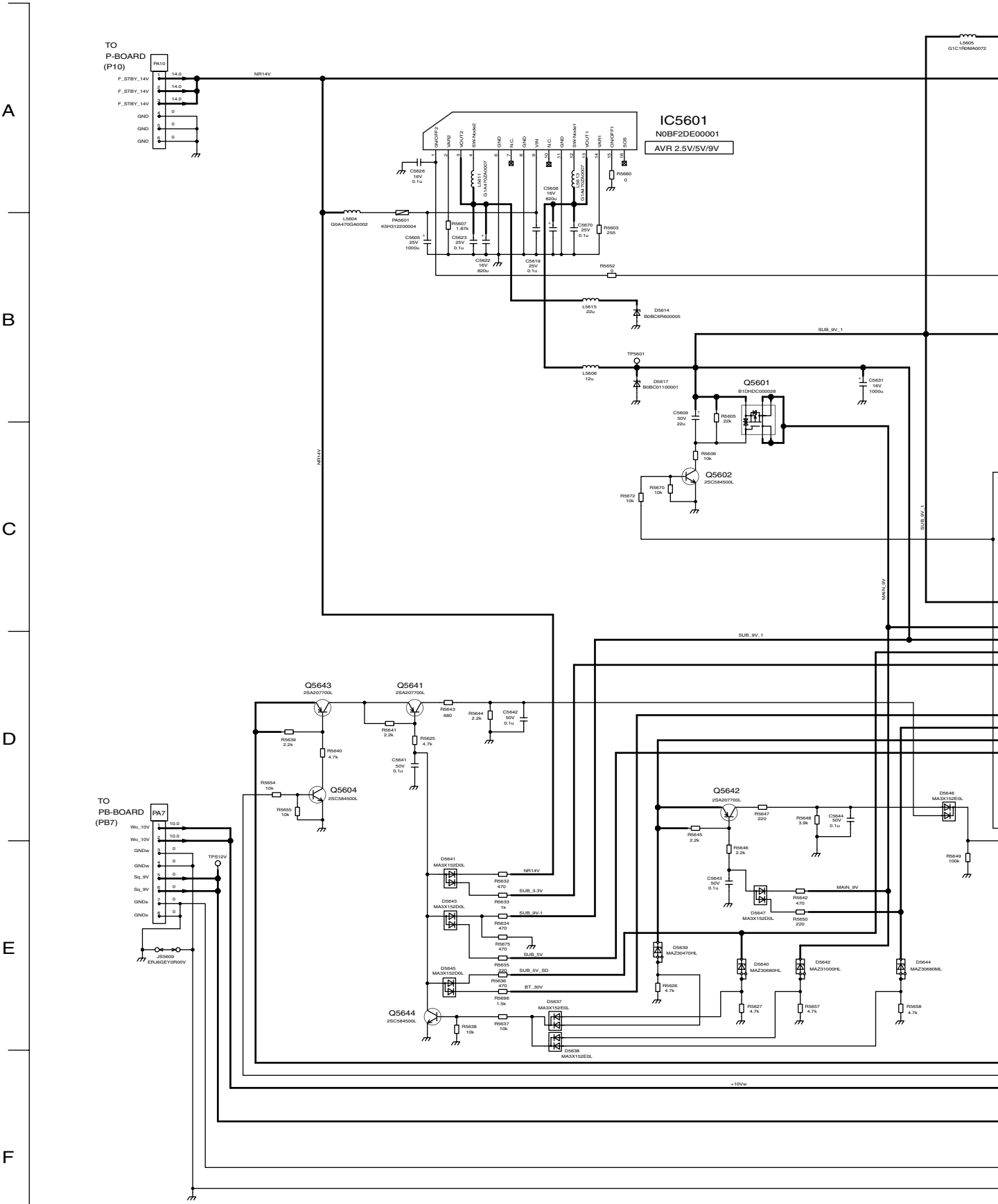


TH-37/42PA50E, TH-37/42PE50B
PA and PB-Board Block Diagram

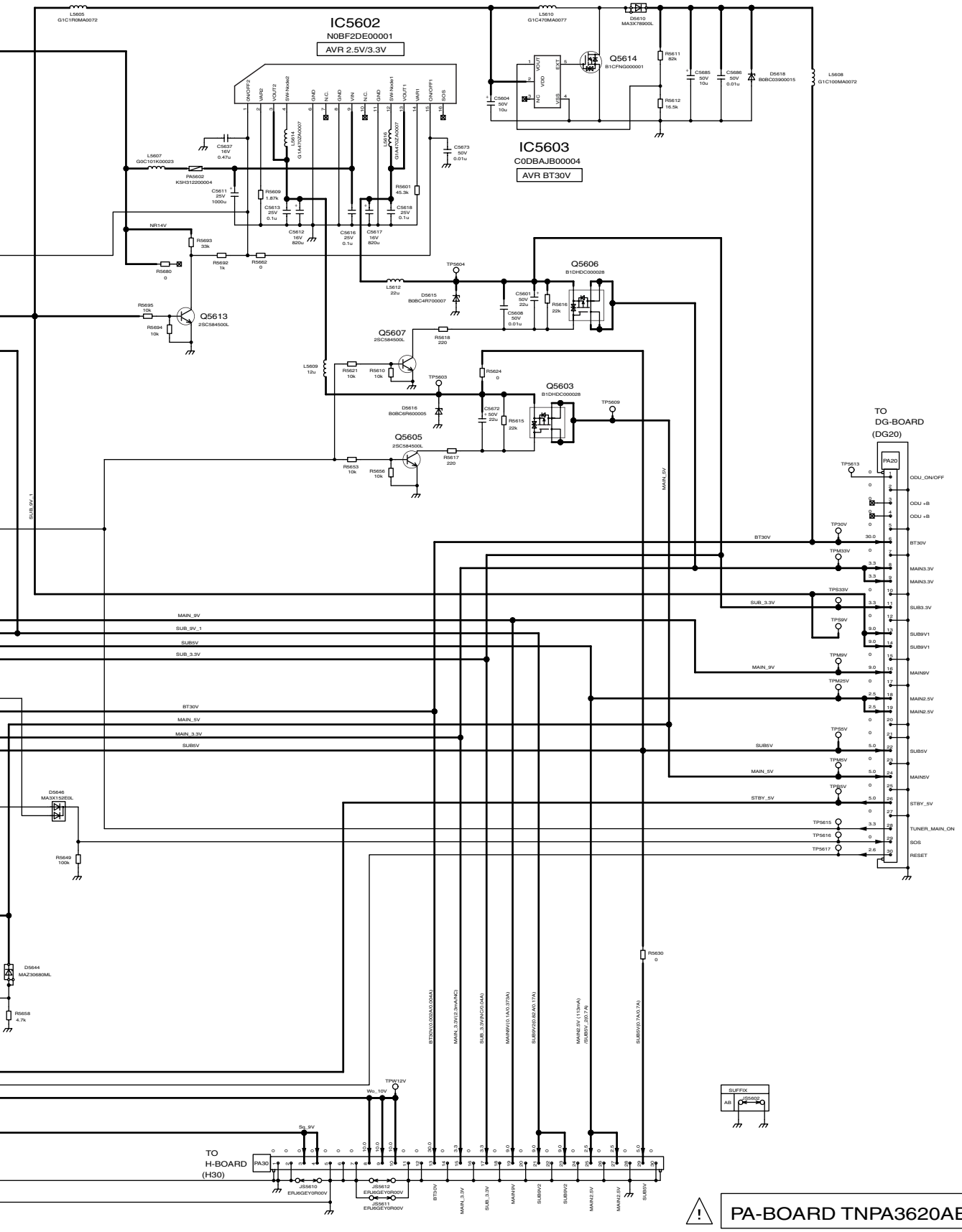


TH-37/42PA50E, TH-37/42PE50B
PA and PB-Board Block Diagram

14.11. PA-Board Schematic Diagram

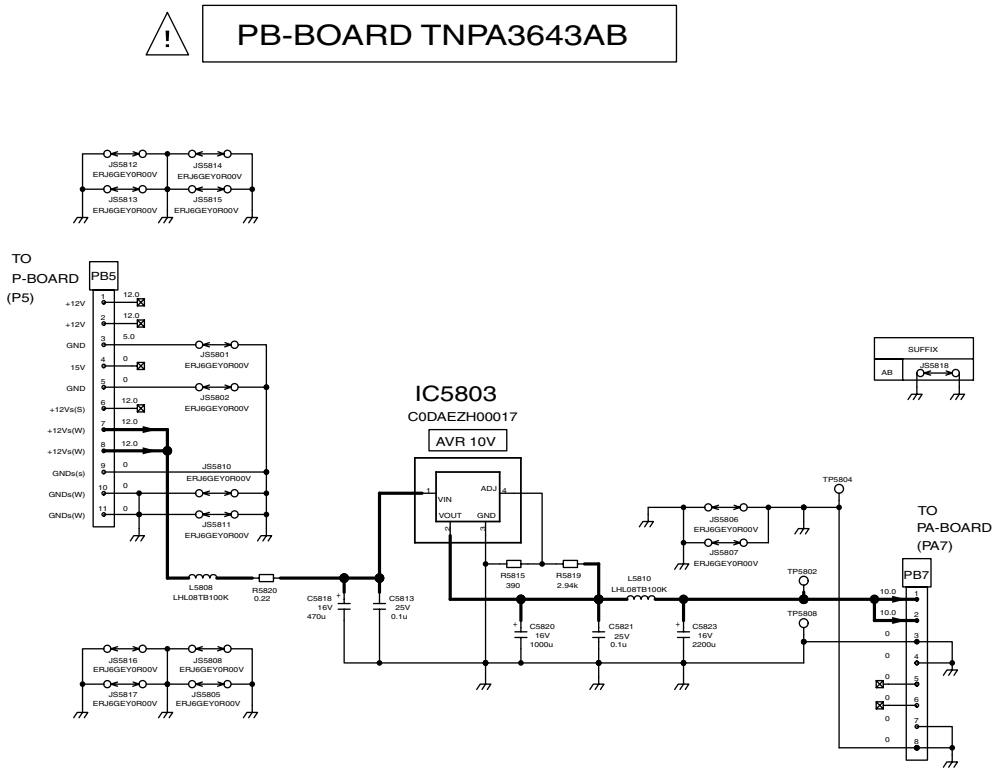


TH-37/42PA50E, TH-37/42PE50B
PA-Board Schematic Diagram

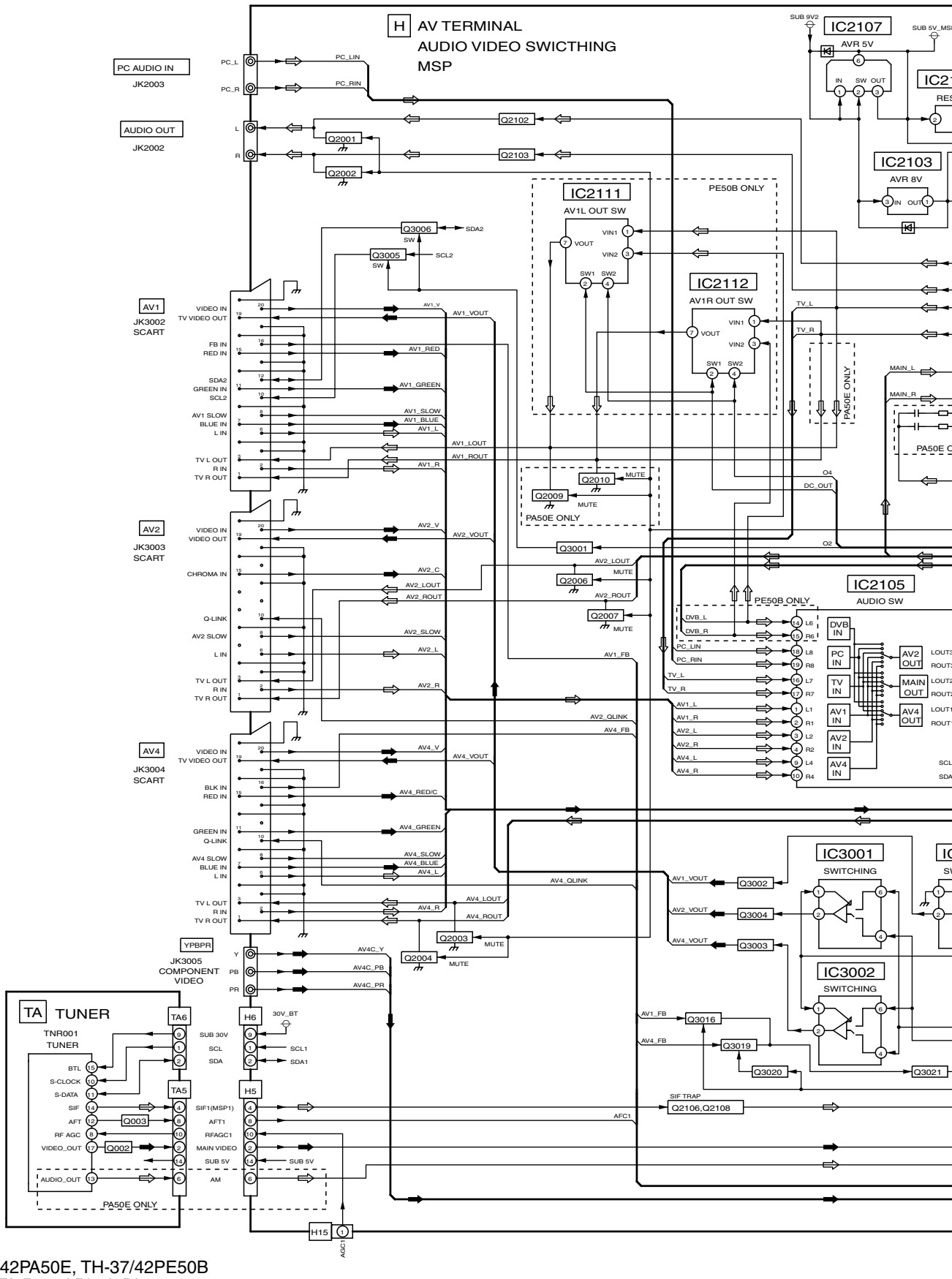


TH-37/42PA50E, TH-37/42PE50B
PA-Board Schematic Diagram

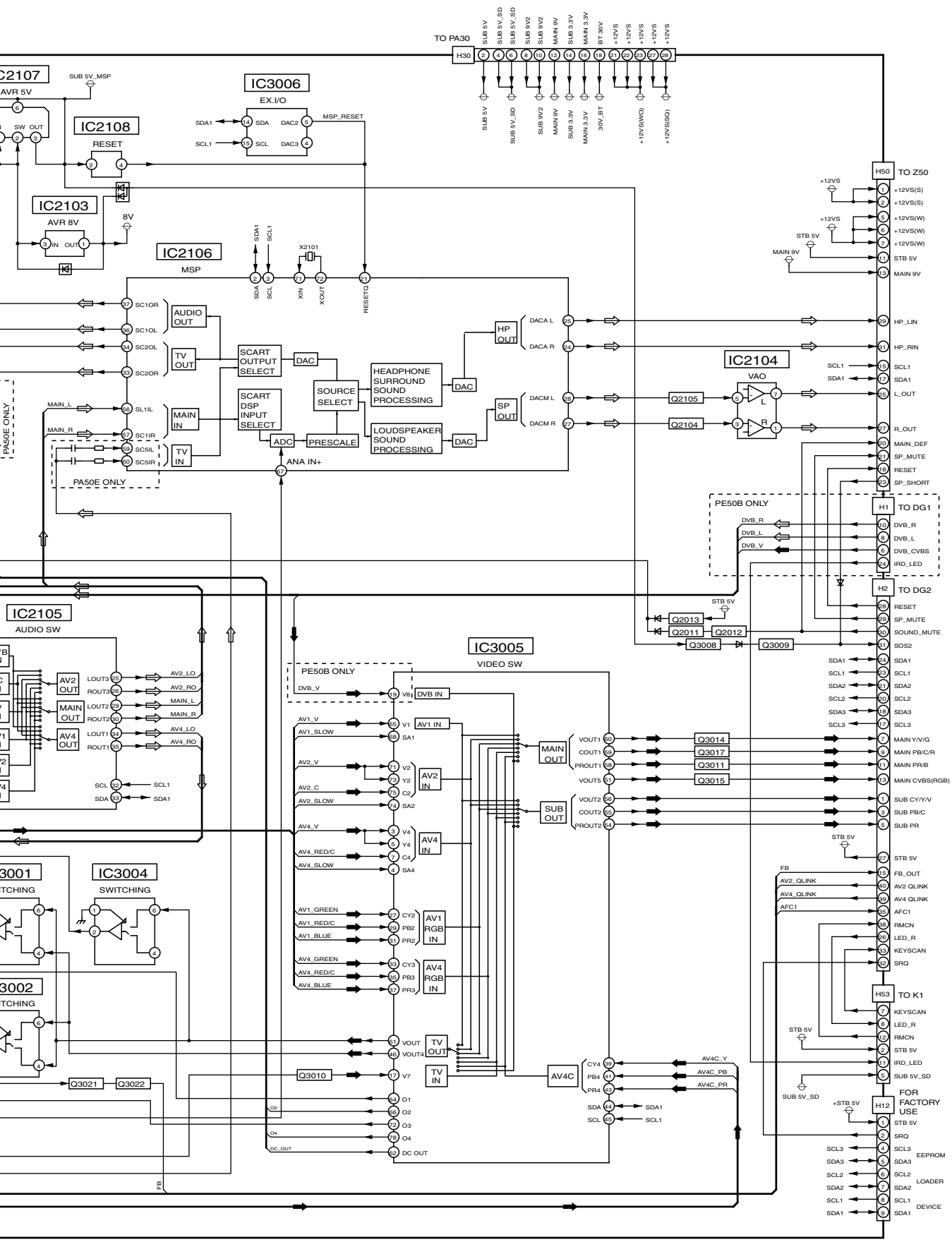
14.12. PB-Board Schematic Diagram



14.13. H and TA-Board Block Diagram

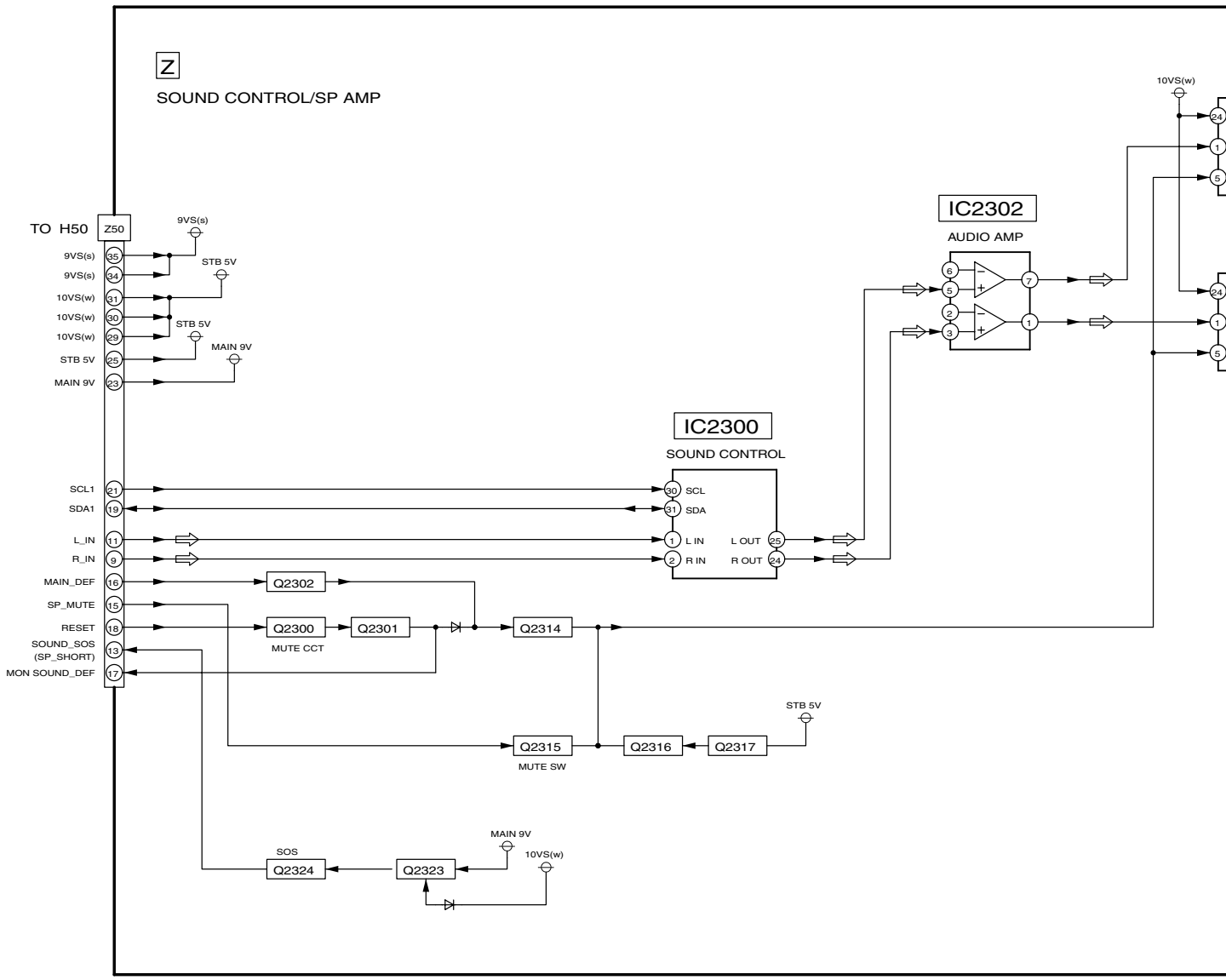


TH-37/42PA50E, TH-37/42PE50B
H and TA-Board Block Diagram

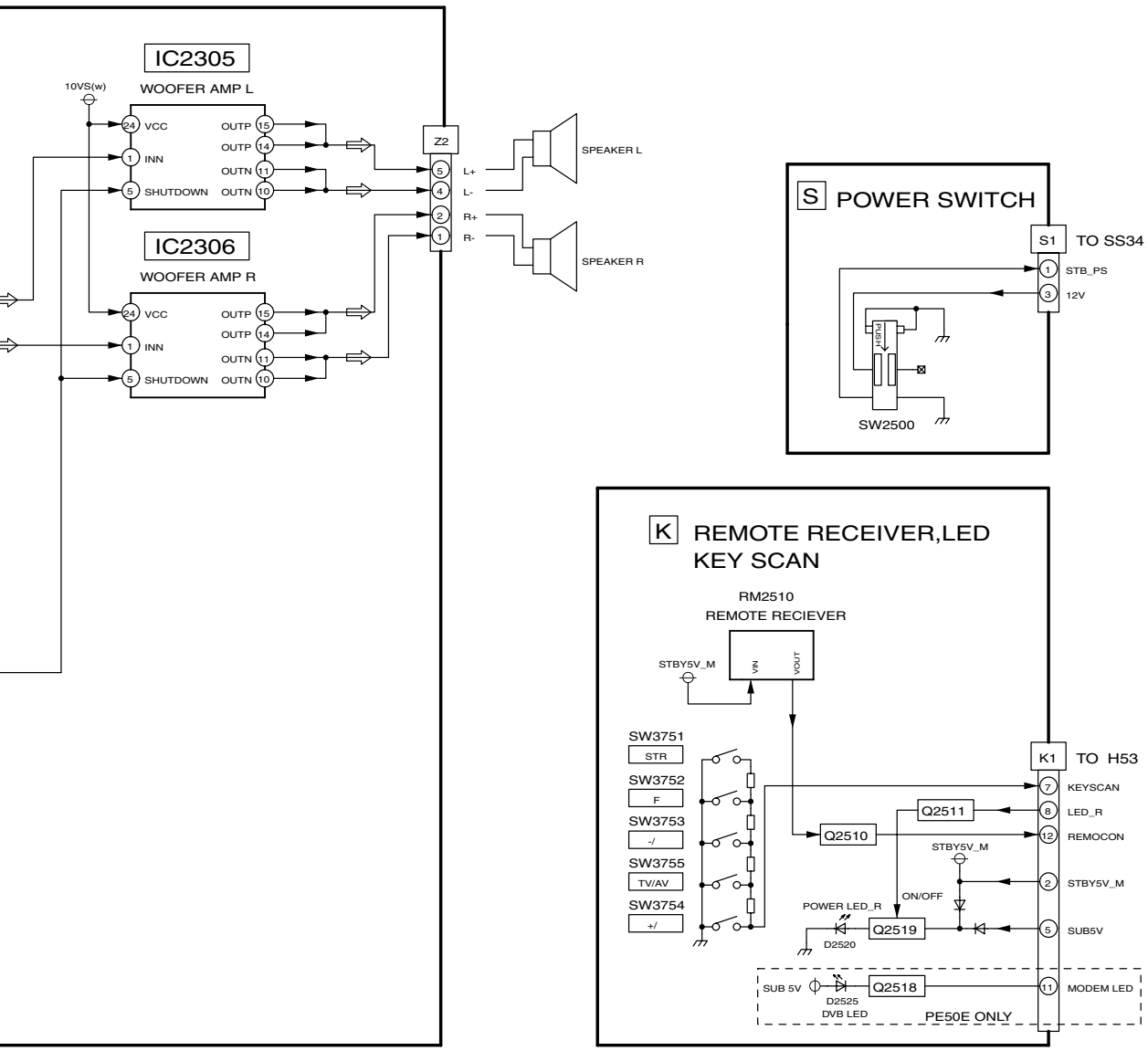


TH-37/42PA50E, TH-37/42PE50B
H and TA-Board Block Diagram

14.14. K, S and Z-Board Block Diagram

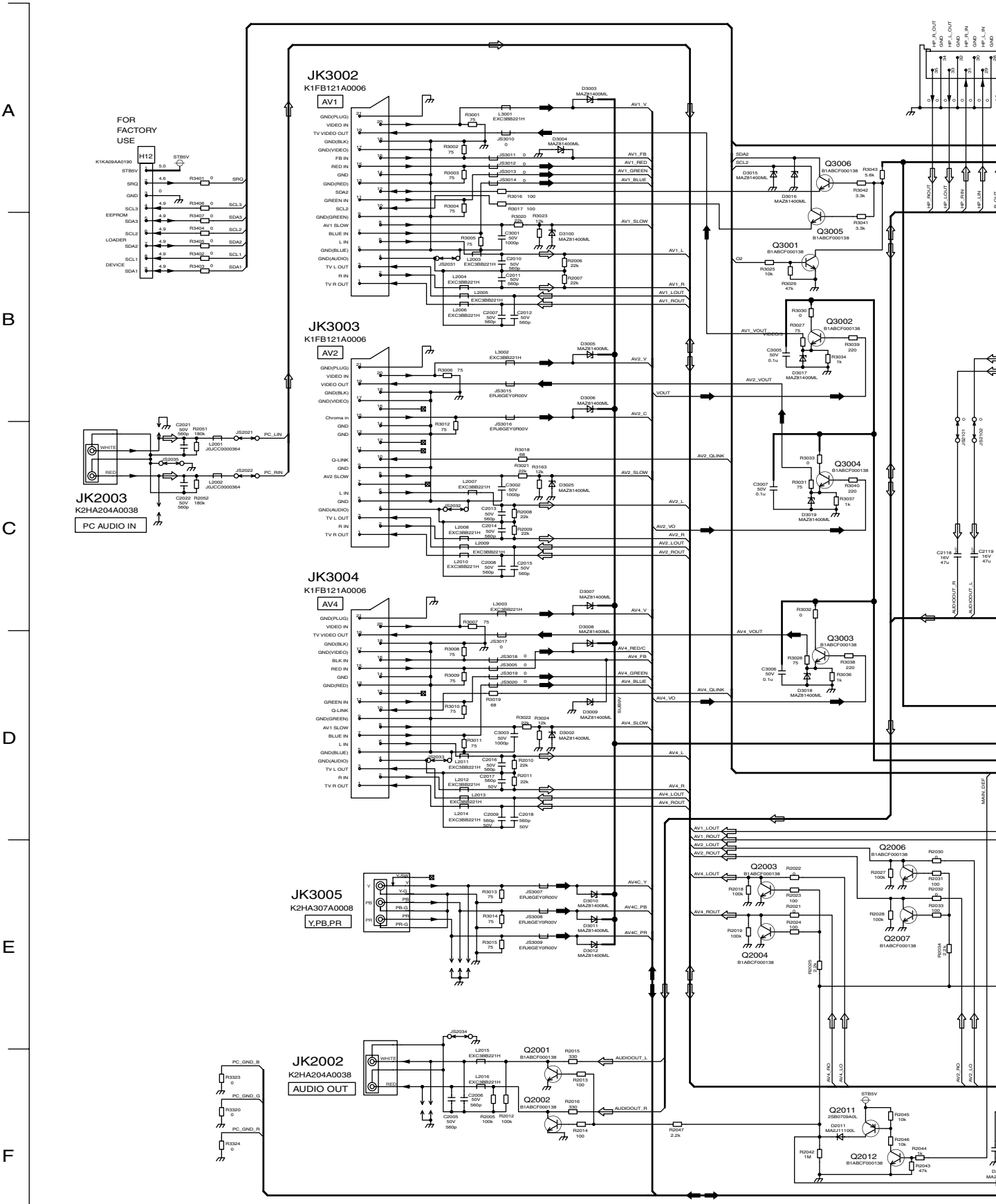


TH-37/42PA50E, TH-37/42PE50B
K,S and Z-Board Block Diagram

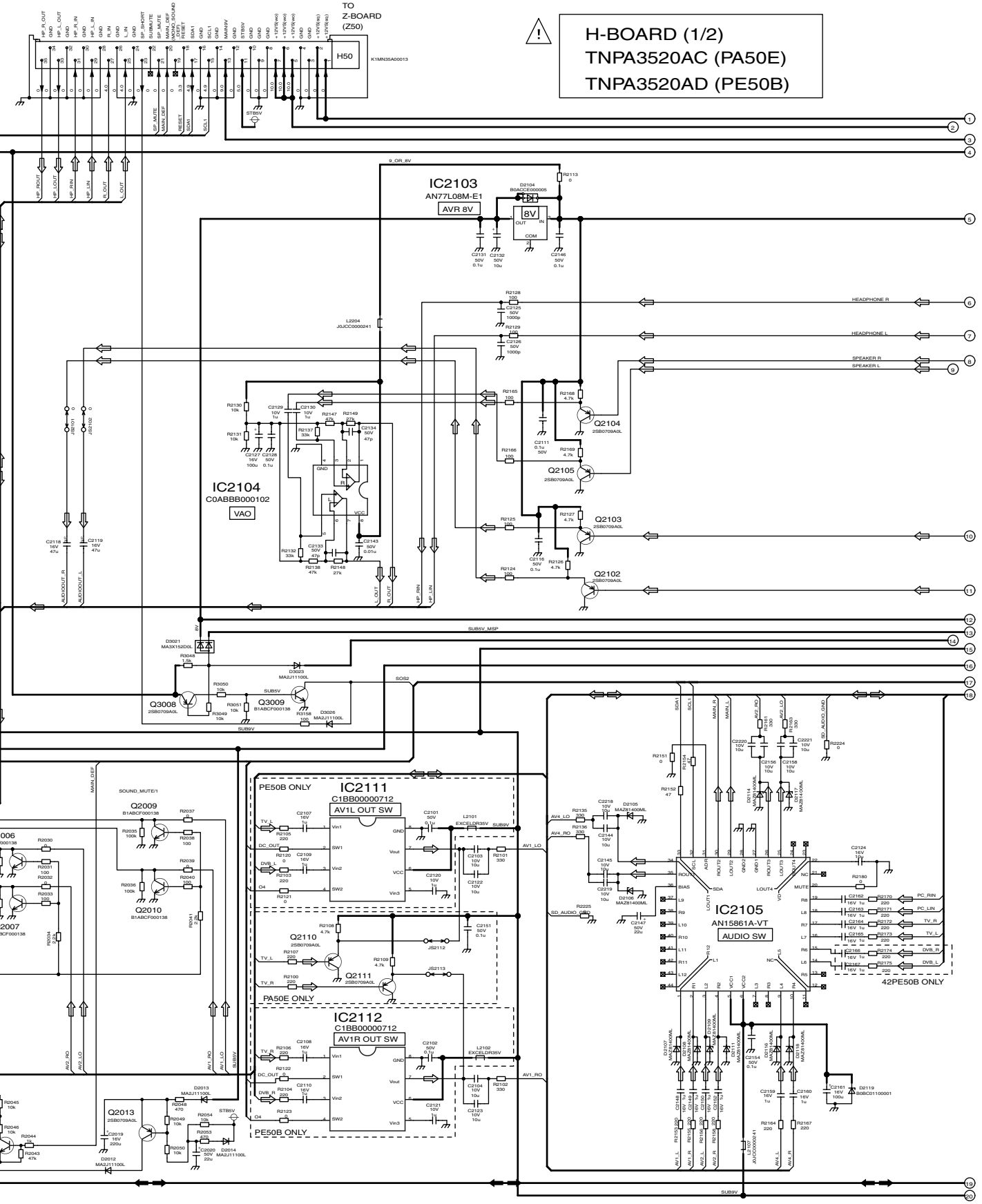


TH-37/42PA50E, TH-37/42PE50B
K,S and Z-Board Block Diagram

14.15. H Board (1 of 2) Schematic Diagram



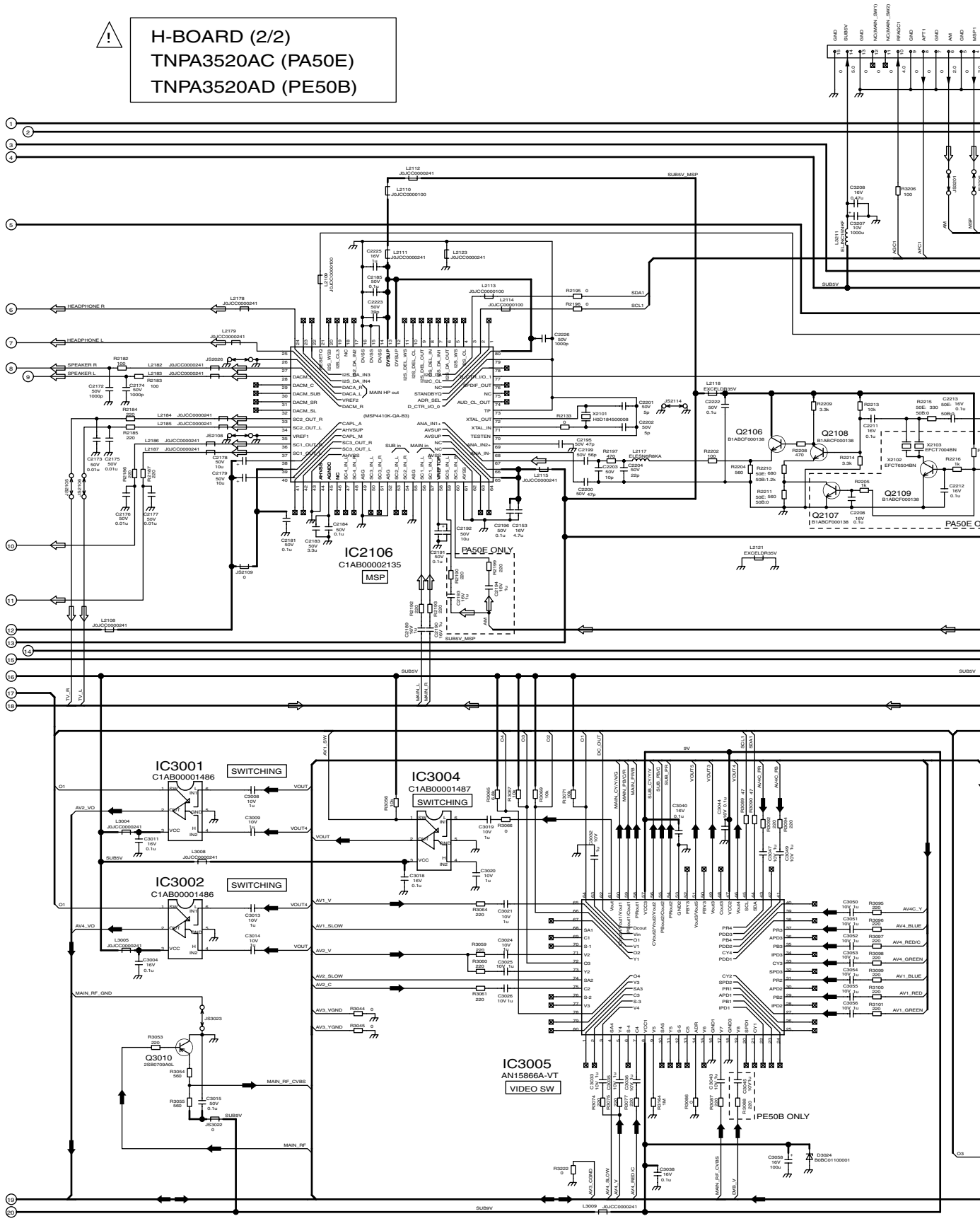
TH-37/42PA50E, TH-37/42PE50B
H-Board (1 of 2) Schematic Diagram



TH-37/42PA50E, TH-37/42PE50B
H-Board (1 of 2) Schematic Diagram

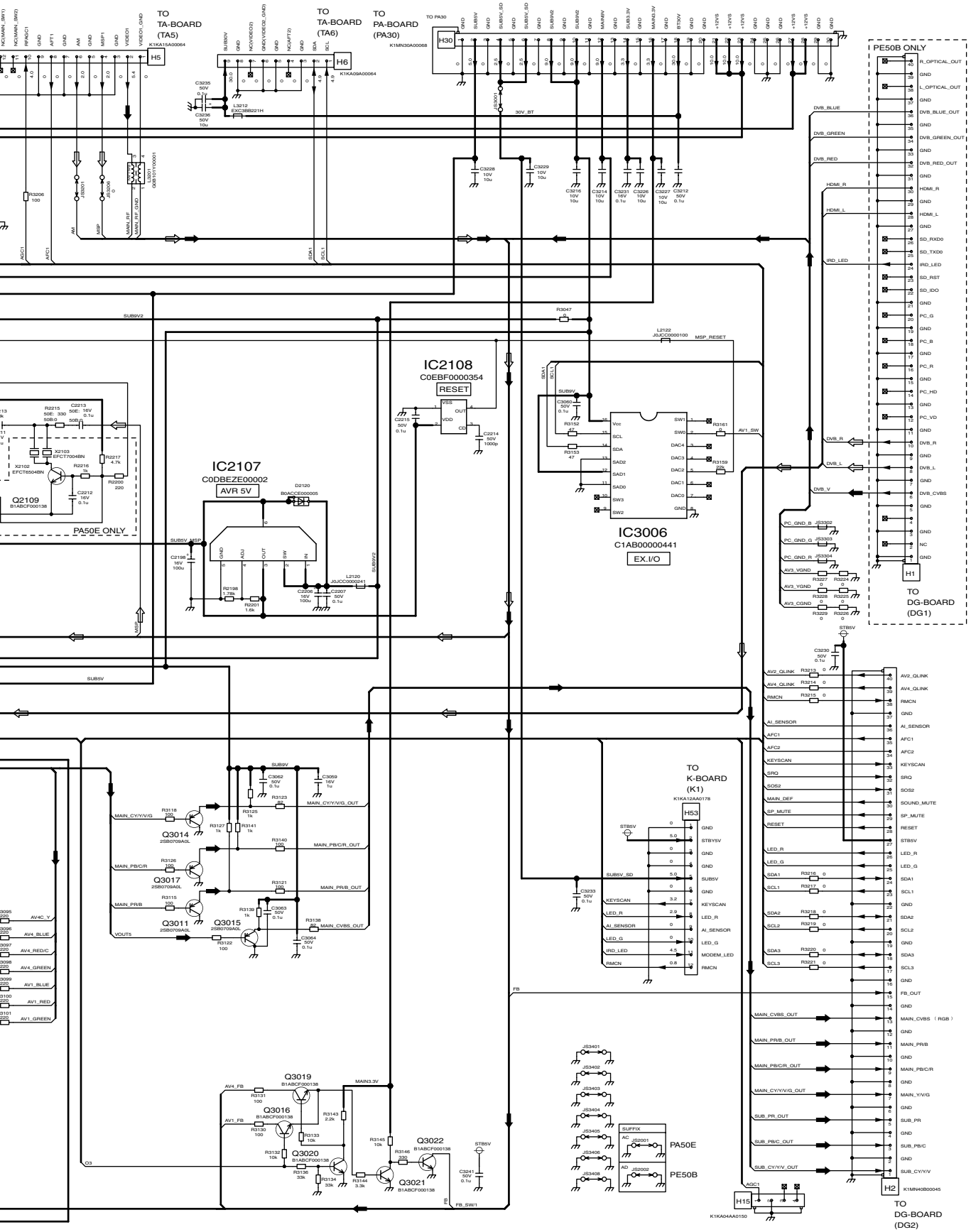
5 6 7 8 9

14.16. H-Board (2 of 2) Schematic Diagram



TH-37/42PA50E, TH-37/42PE50B
H-Board (2 of 2) Schematic Diagram

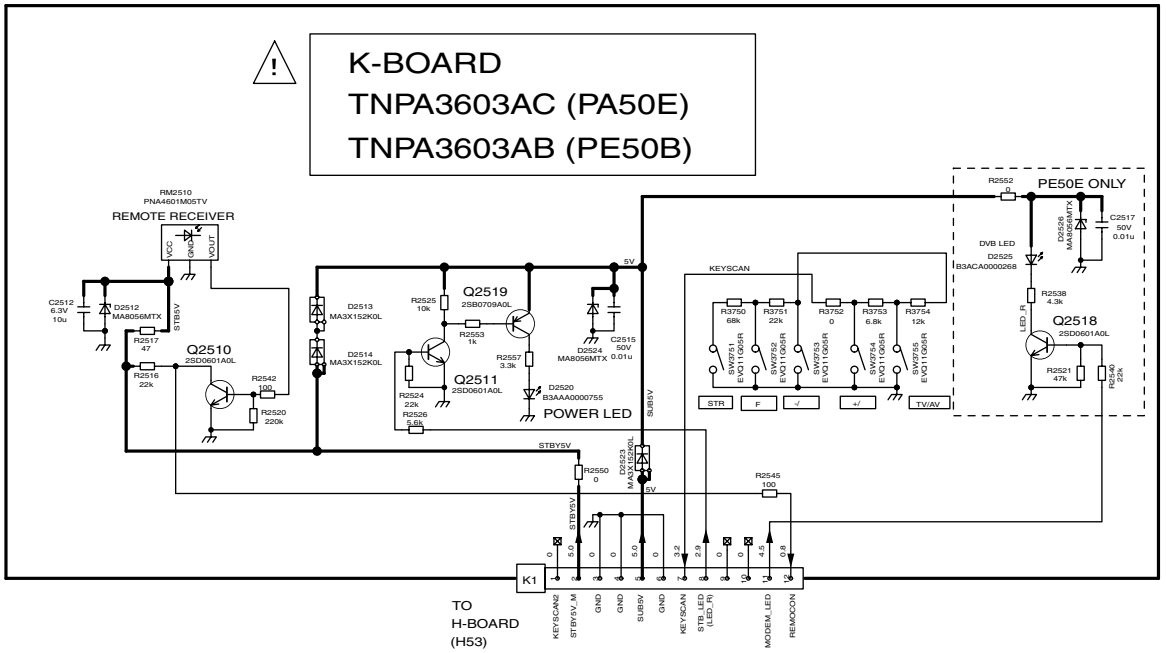
10 | 11 | 12 | 13 | 14

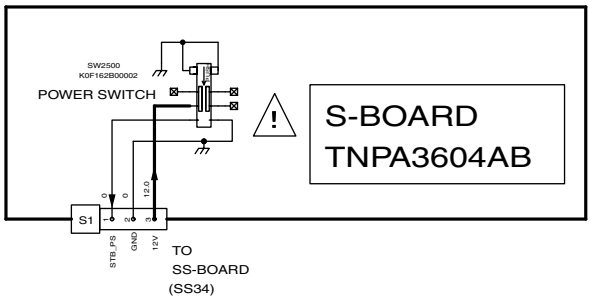


TH-37/42PA50E, TH-37/42PE50B
H-Board (2 of 2) Schematic Diagram

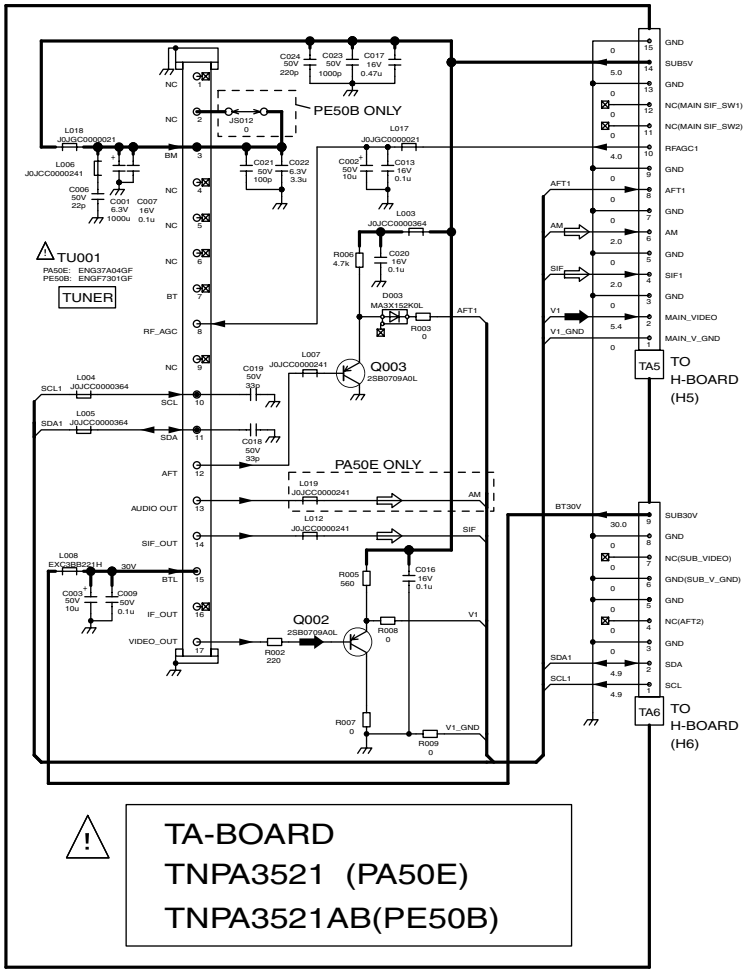
14 15 16 17 18

14.17. K, S and TA-Board Schematic Diagram





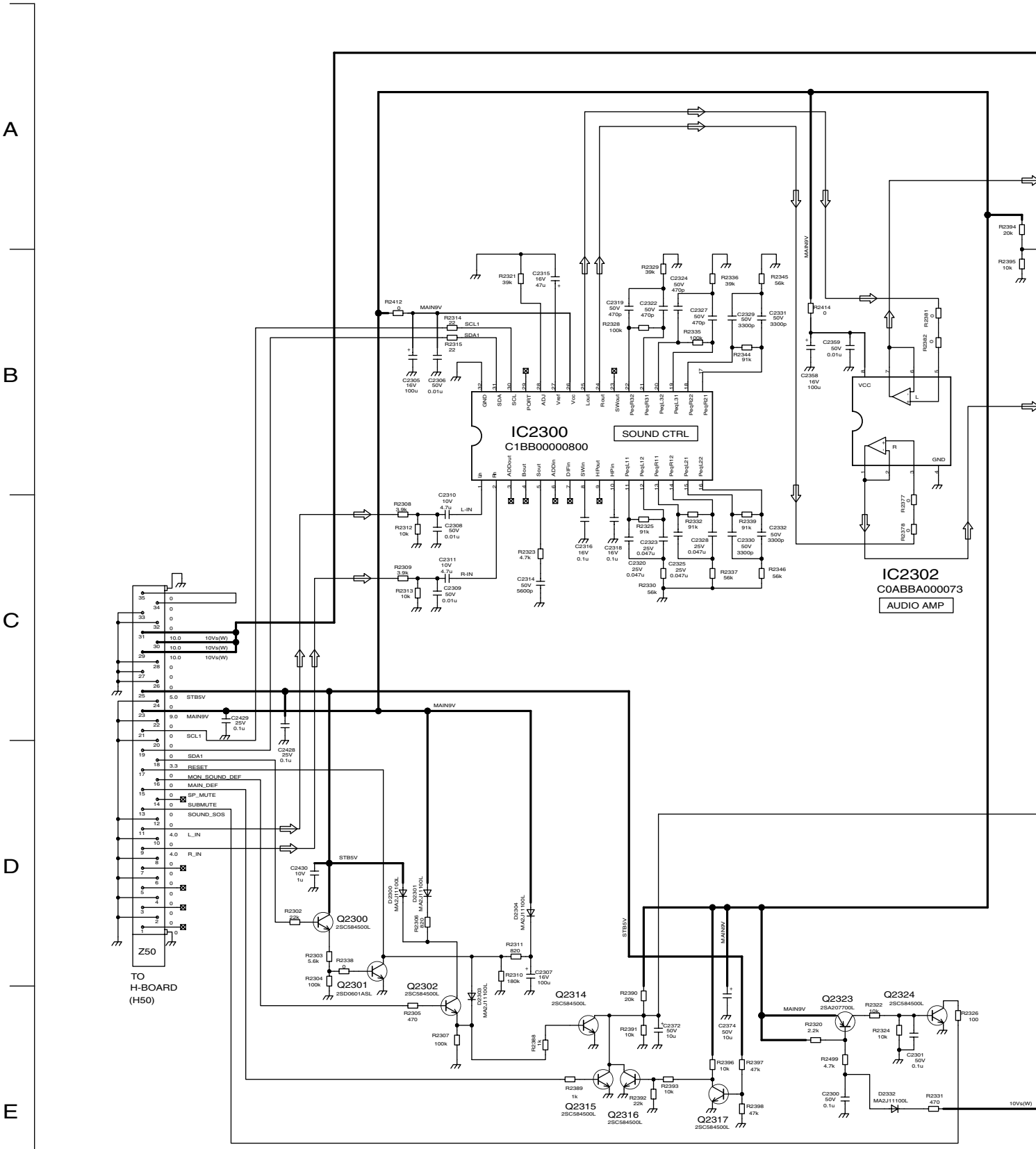
TH-37/42PA50E, TH-37/42PE50B
K,S and TA-Board Schematic Diagram



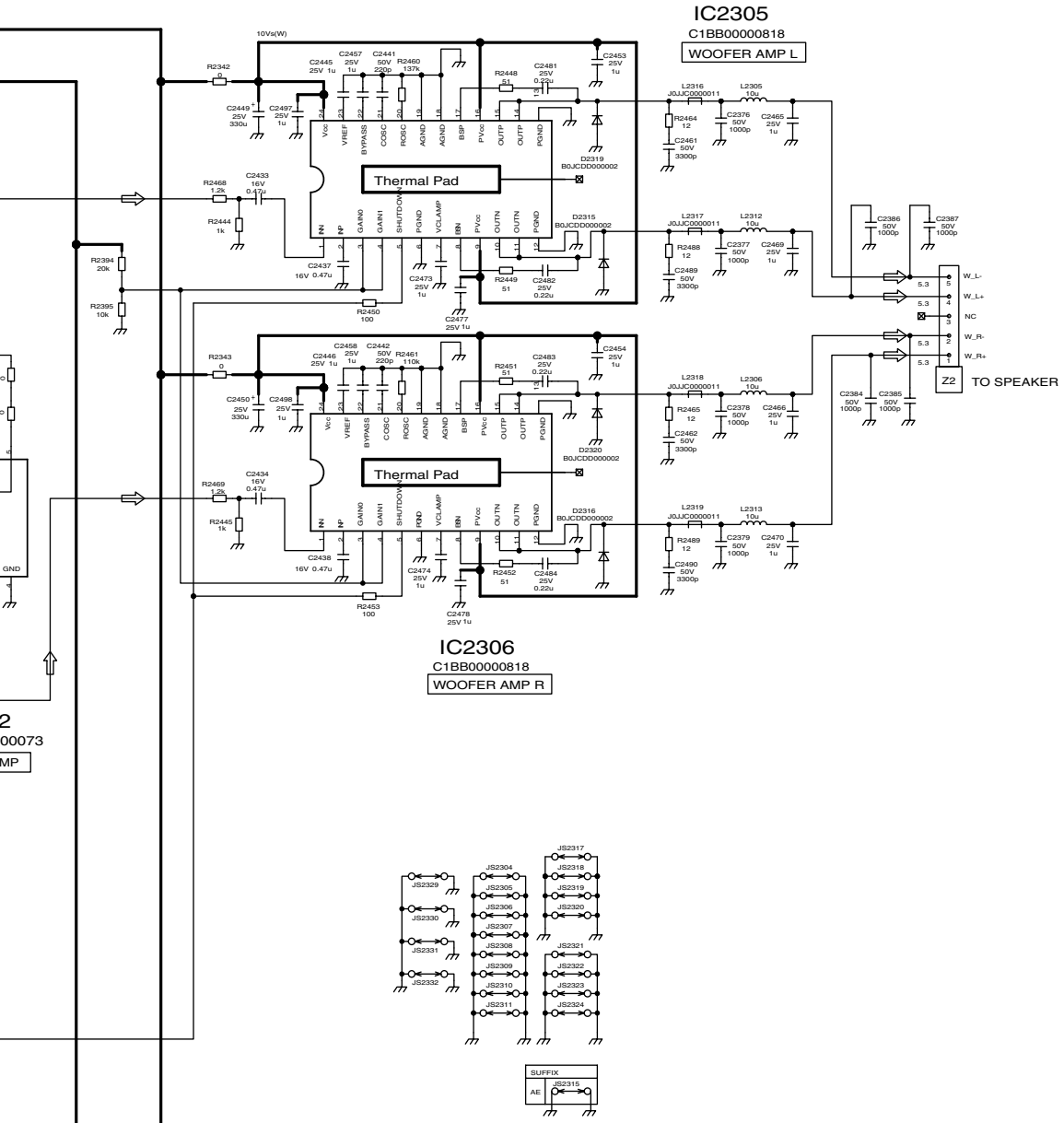
TH-37/42PA50E, TH-37/42PE50B
K,S and TA-Board Schematic Diagram

4 5 6 7 8

14.18. Z-Board Schematic Diagram



TH-37/42PA50E, TH-37/42PE50B
Z-Board Schematic Diagram

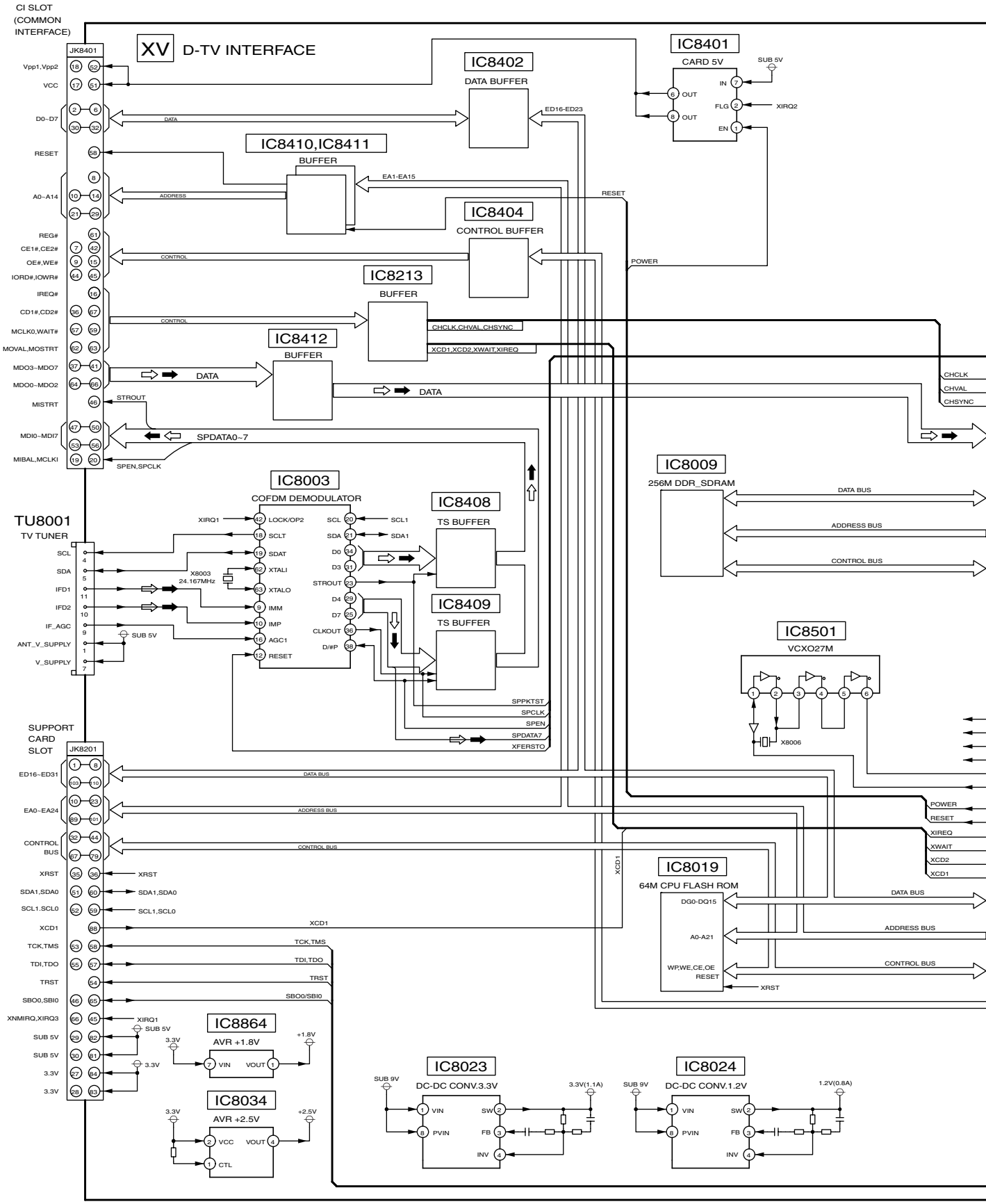


Z-BOARD TNPA3621AE

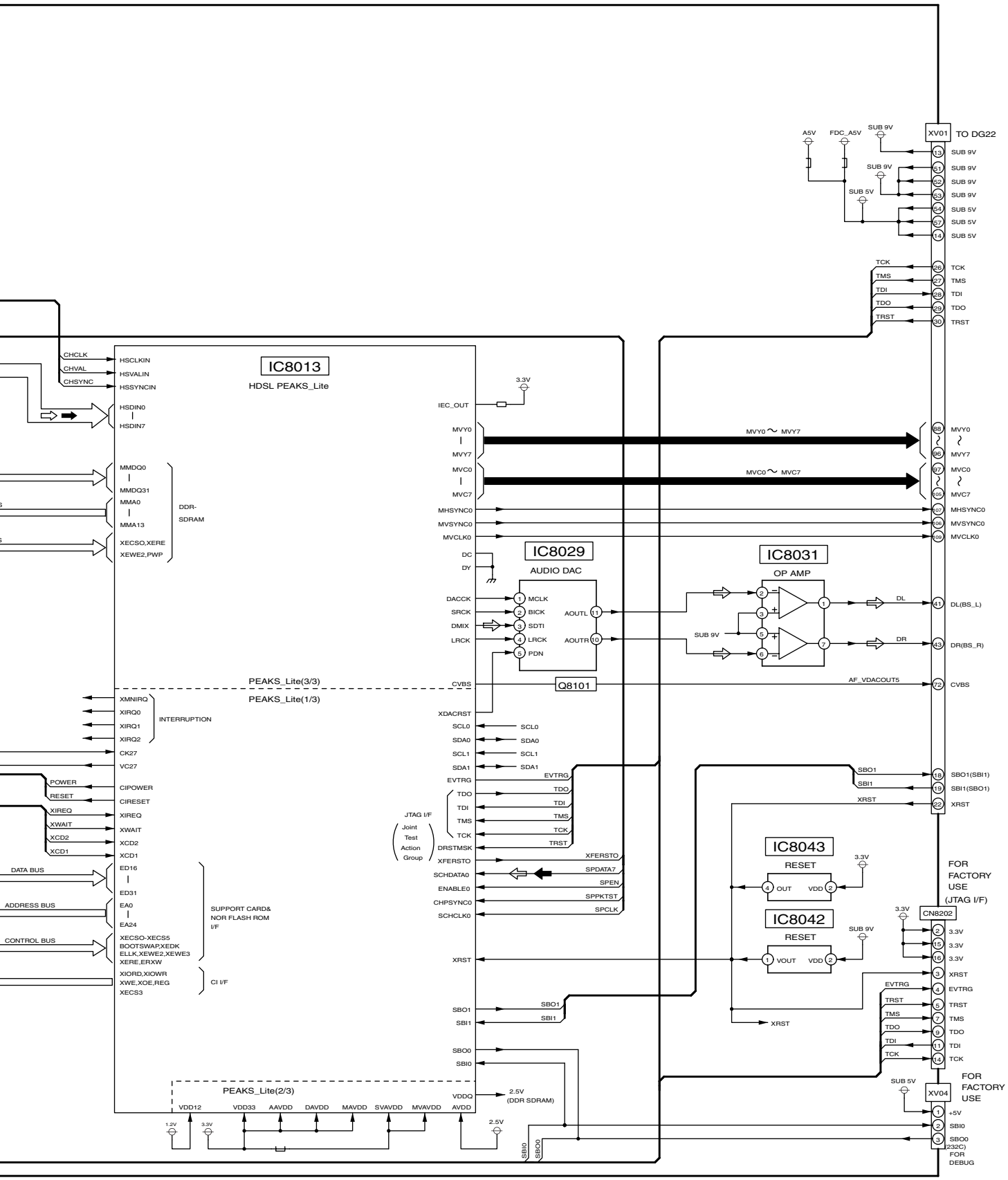
TH-37/42PA50E, TH-37/42PE50B
Z-Board Schematic Diagram

5 6 7 8

14.19. XV-Board Block Diagram (PE50B)

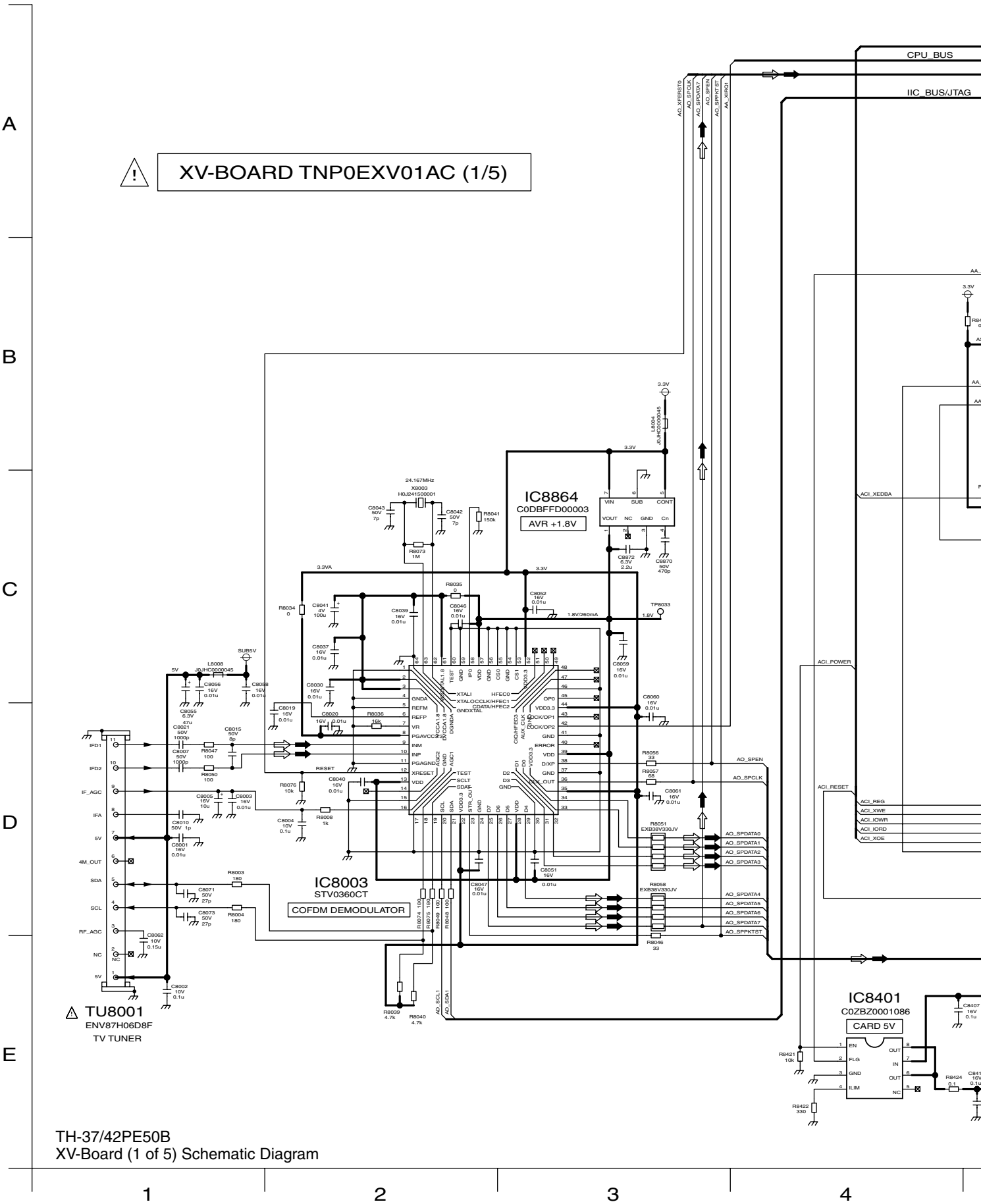


TH-37/42PE50B
XV-Board Block Diagram

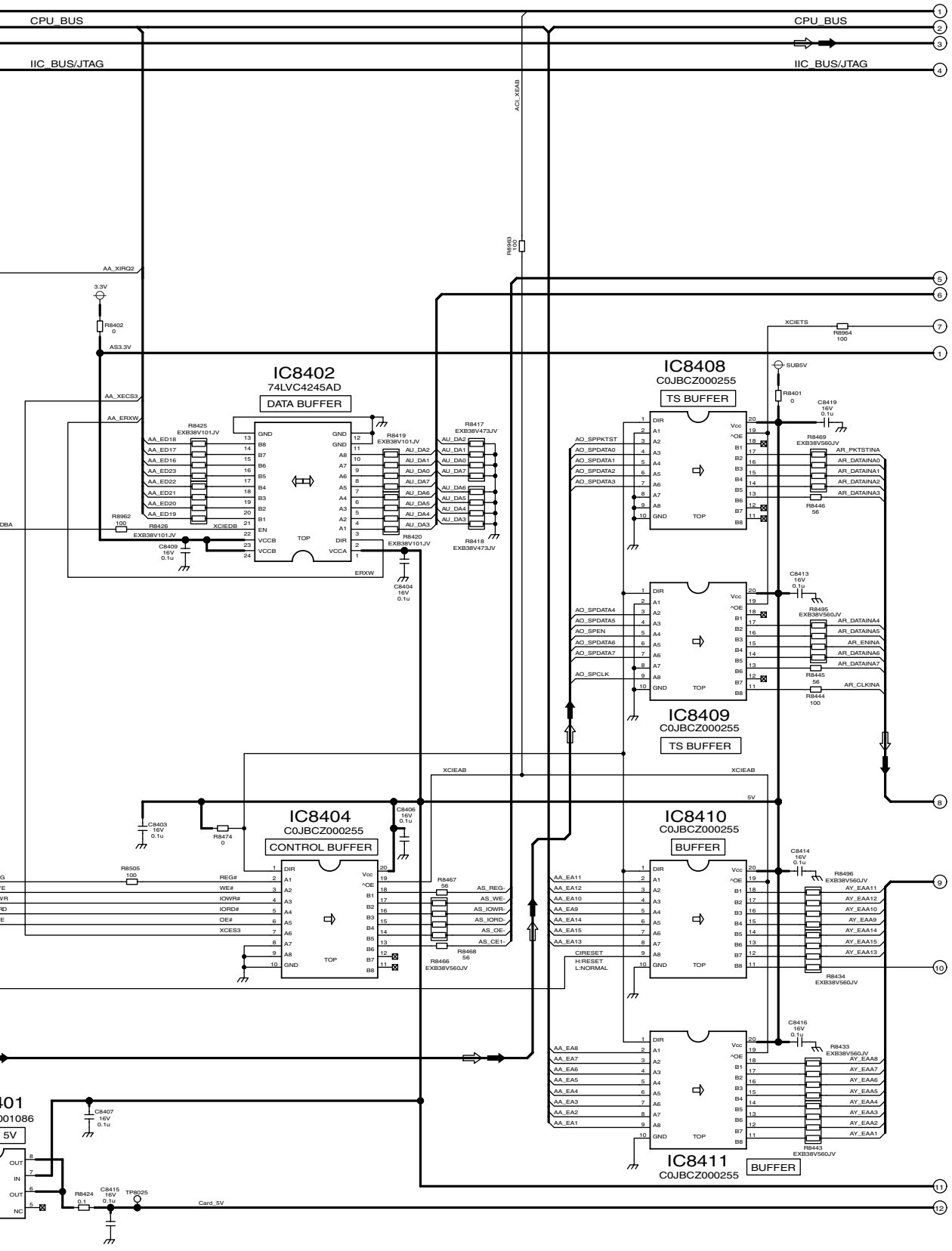


TH-37/42PE50B
XV-Board Block Diagram

14.20. XV-Board (1 of 5) Schematic Diagram (PE50B)



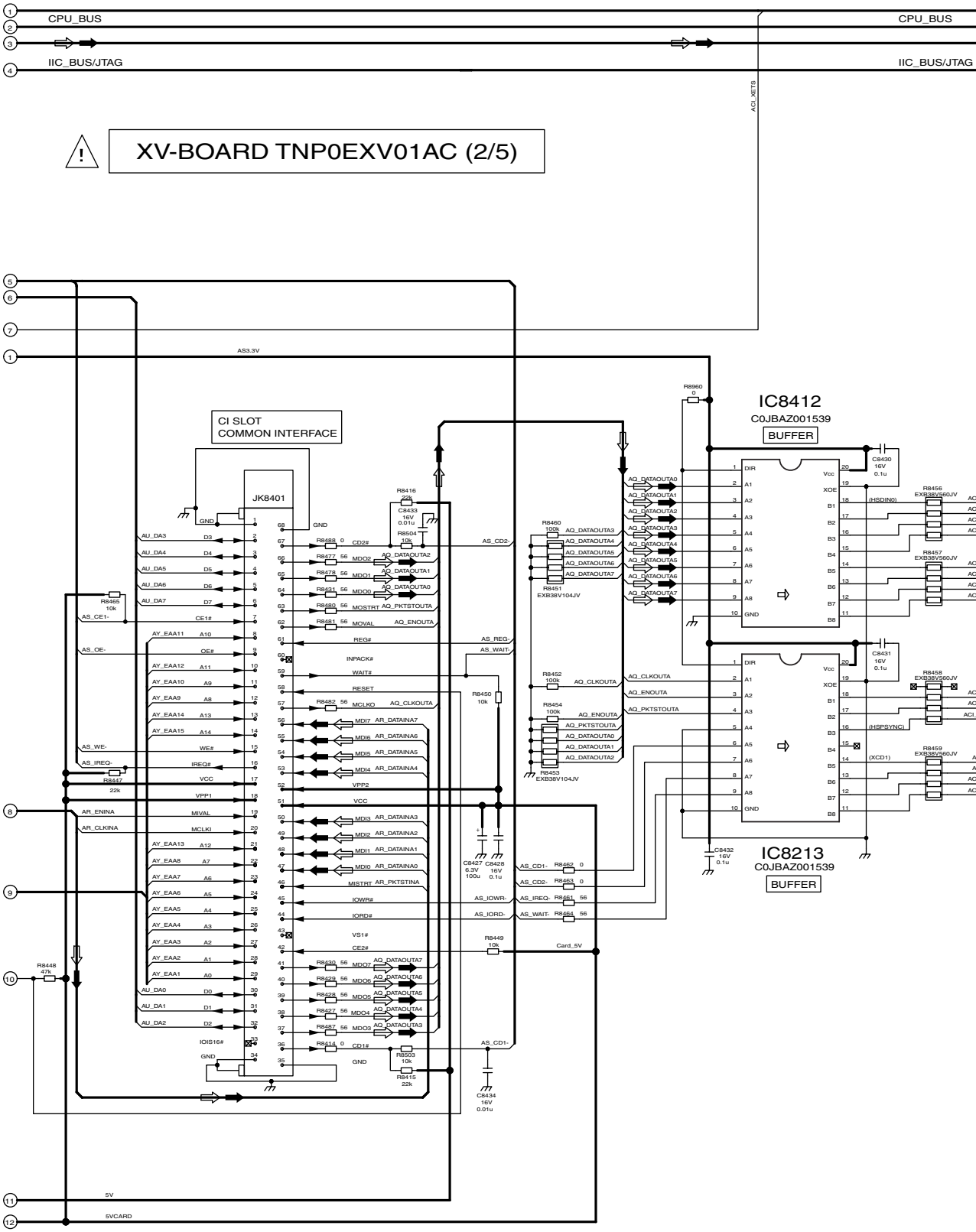
TH-37/42PE50B
XV-Board (1 of 5) Schematic Diagram



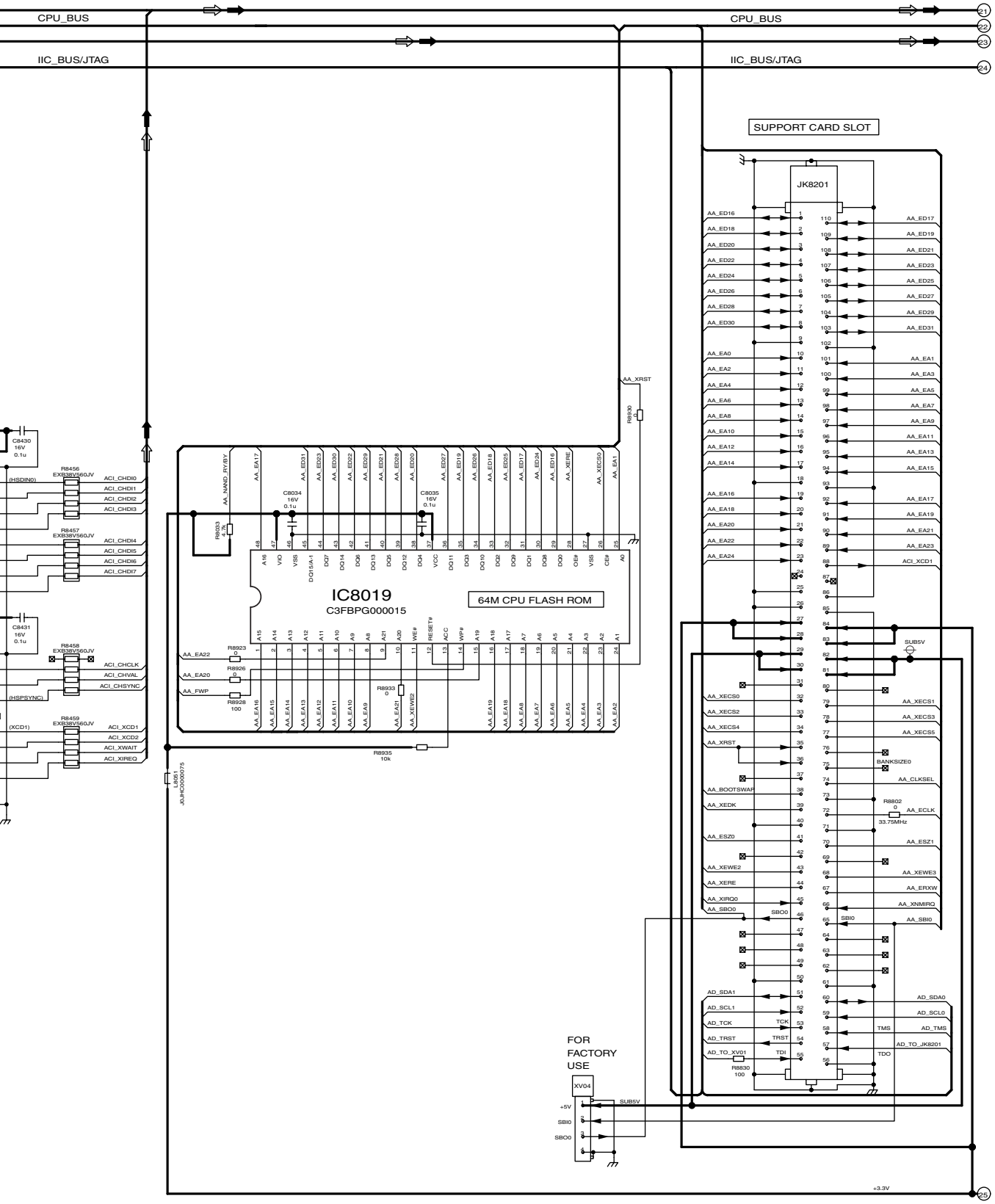
TH-37/42PE50B
XV-Board (1 of 5) Schematic Diagram

5 6 7 8

14.21. XV-Board (2 of 5) Schematic Diagram (PE50B)

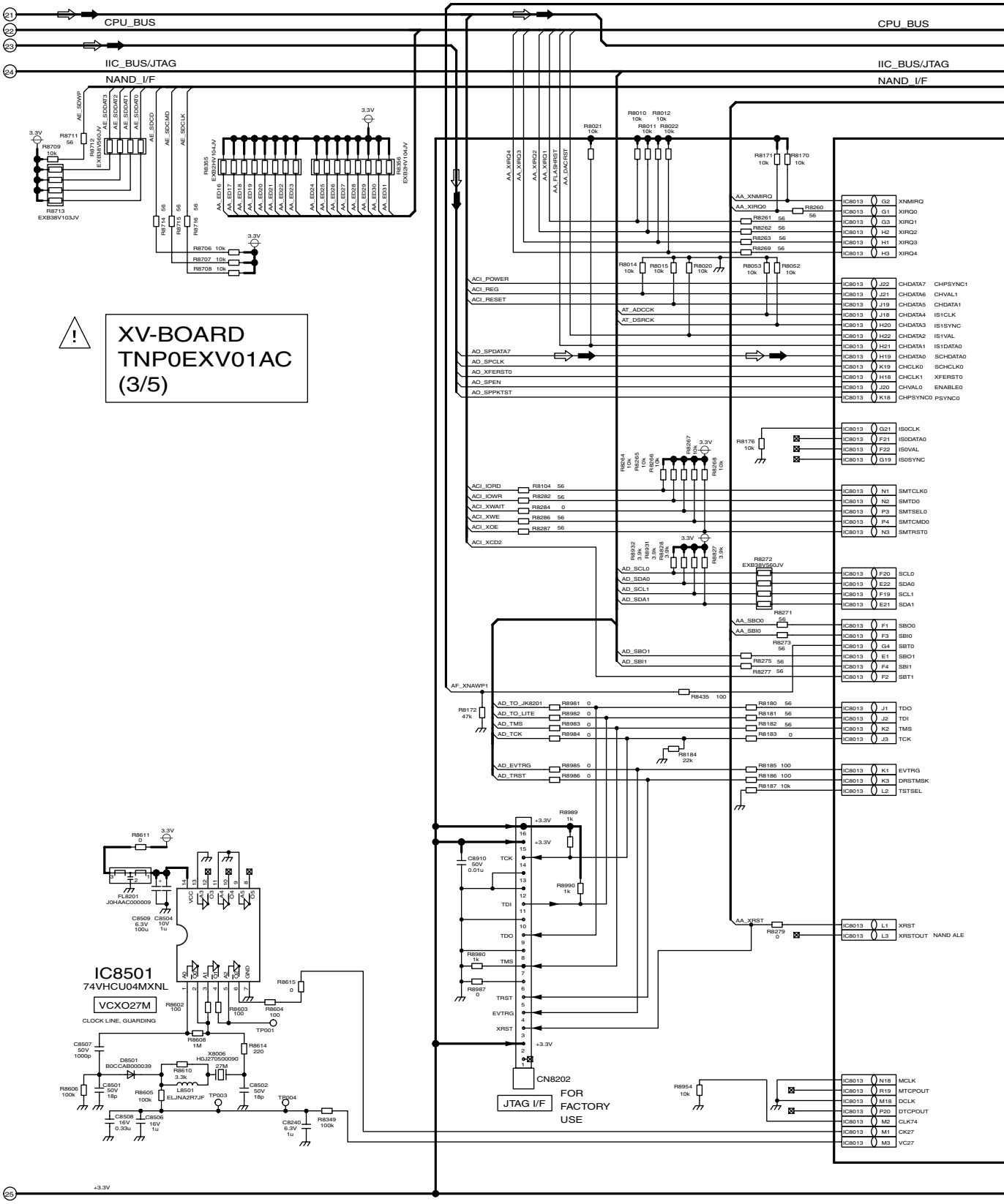


TH-37/42PE50B
XV-Board (2 of 5) Schematic Diagram

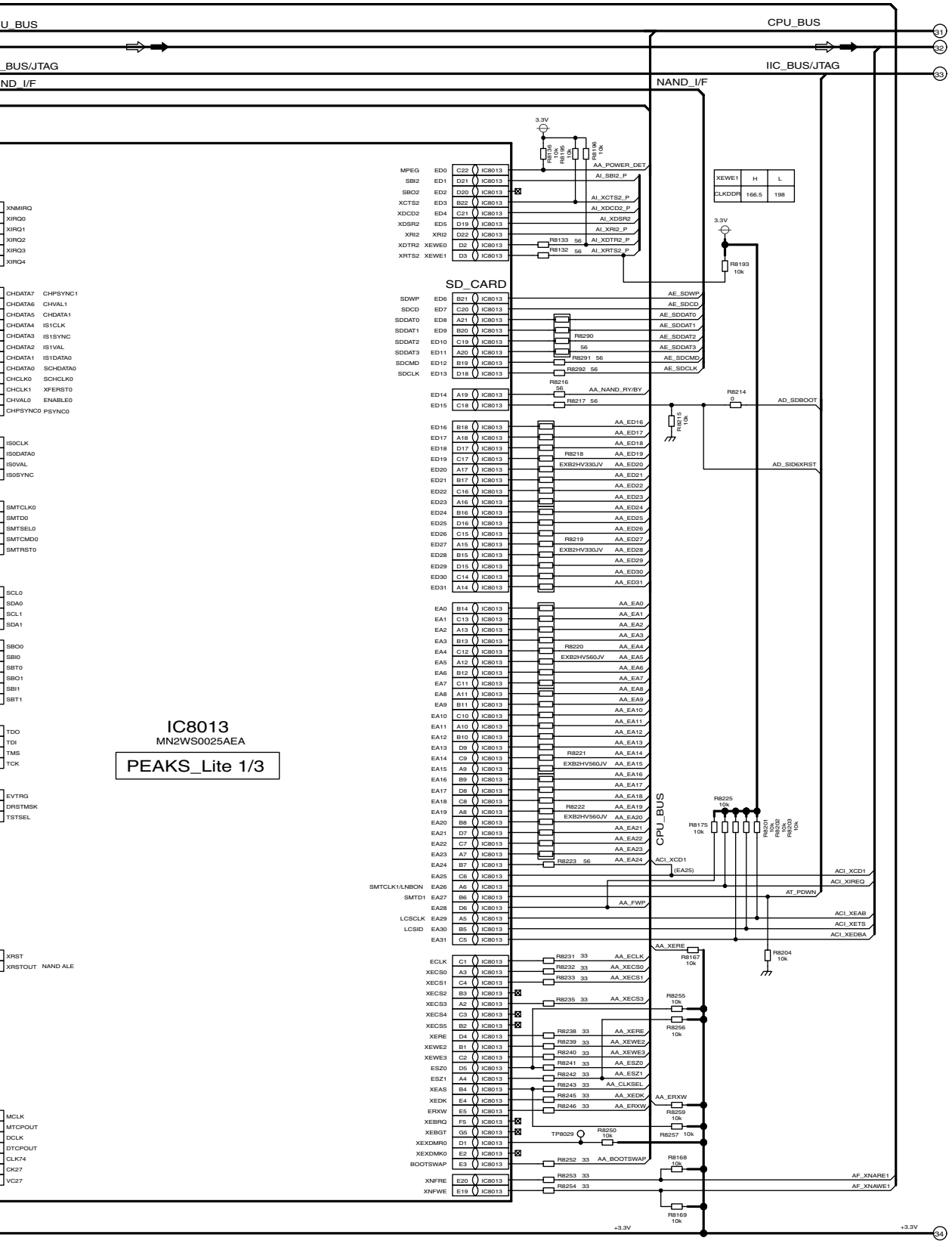


TH-37/42PE50B
XV-Board (2 of 5) Schematic Diagram

14.22. XV-Board (3 of 5) Schematic Diagram (PE50B)

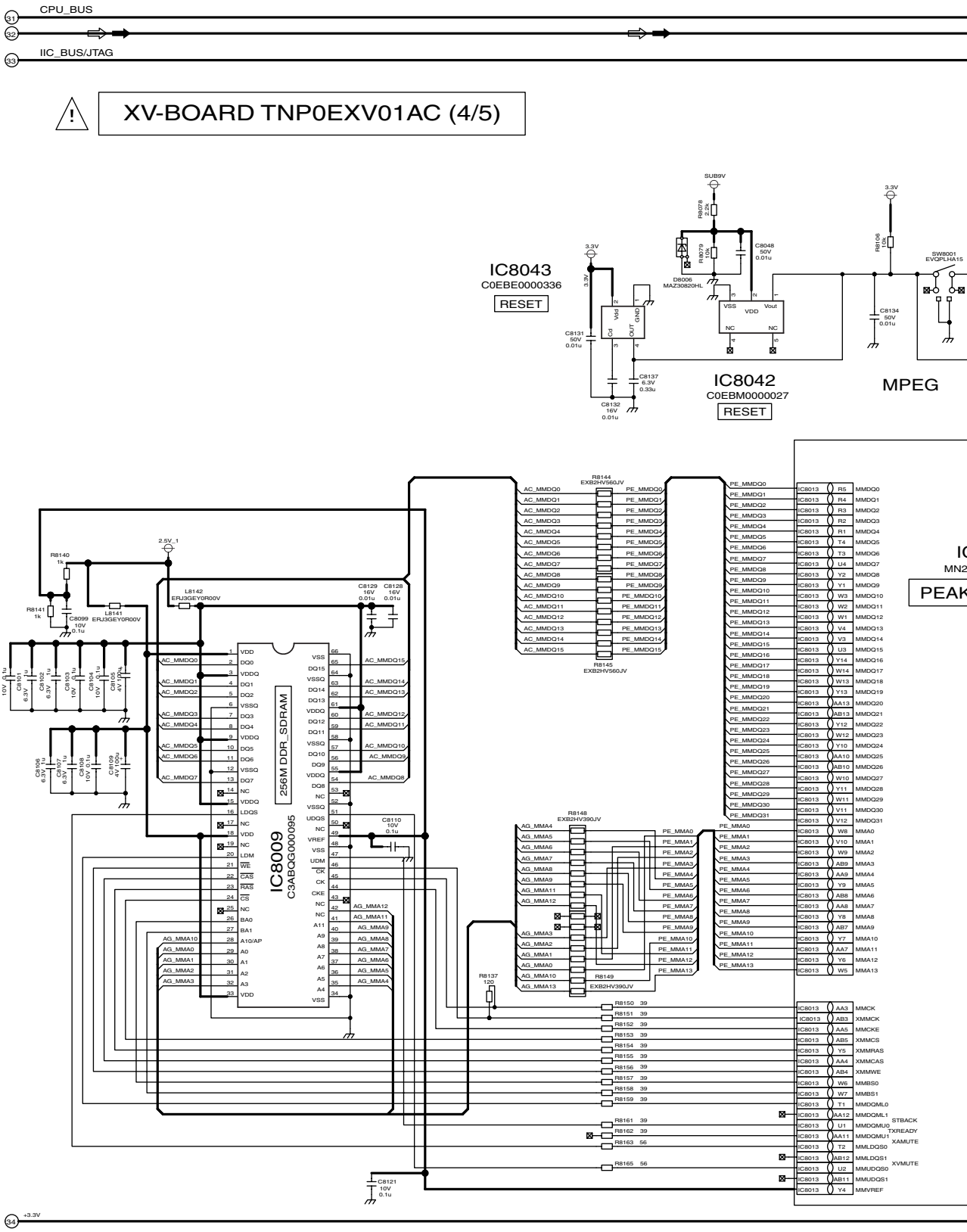


TH-37/42PE50B
XV-Board (3 of 5) Schematic Diagram

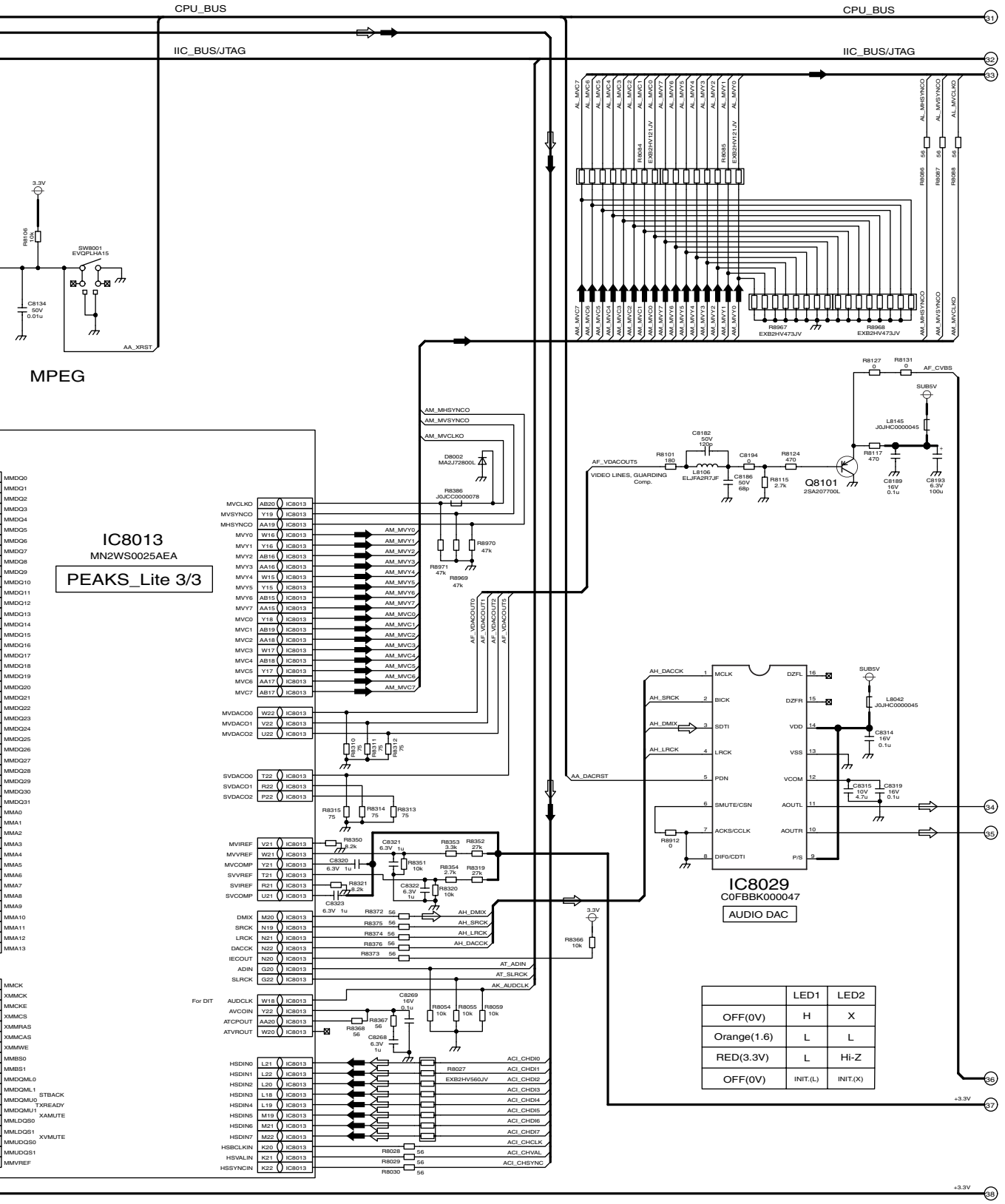


TH-37/42PE50B
XV-Board (3 of 5) Schematic Diagram

14.23. XV-Board (4 of 5) Schematic Diagram (PE50B)

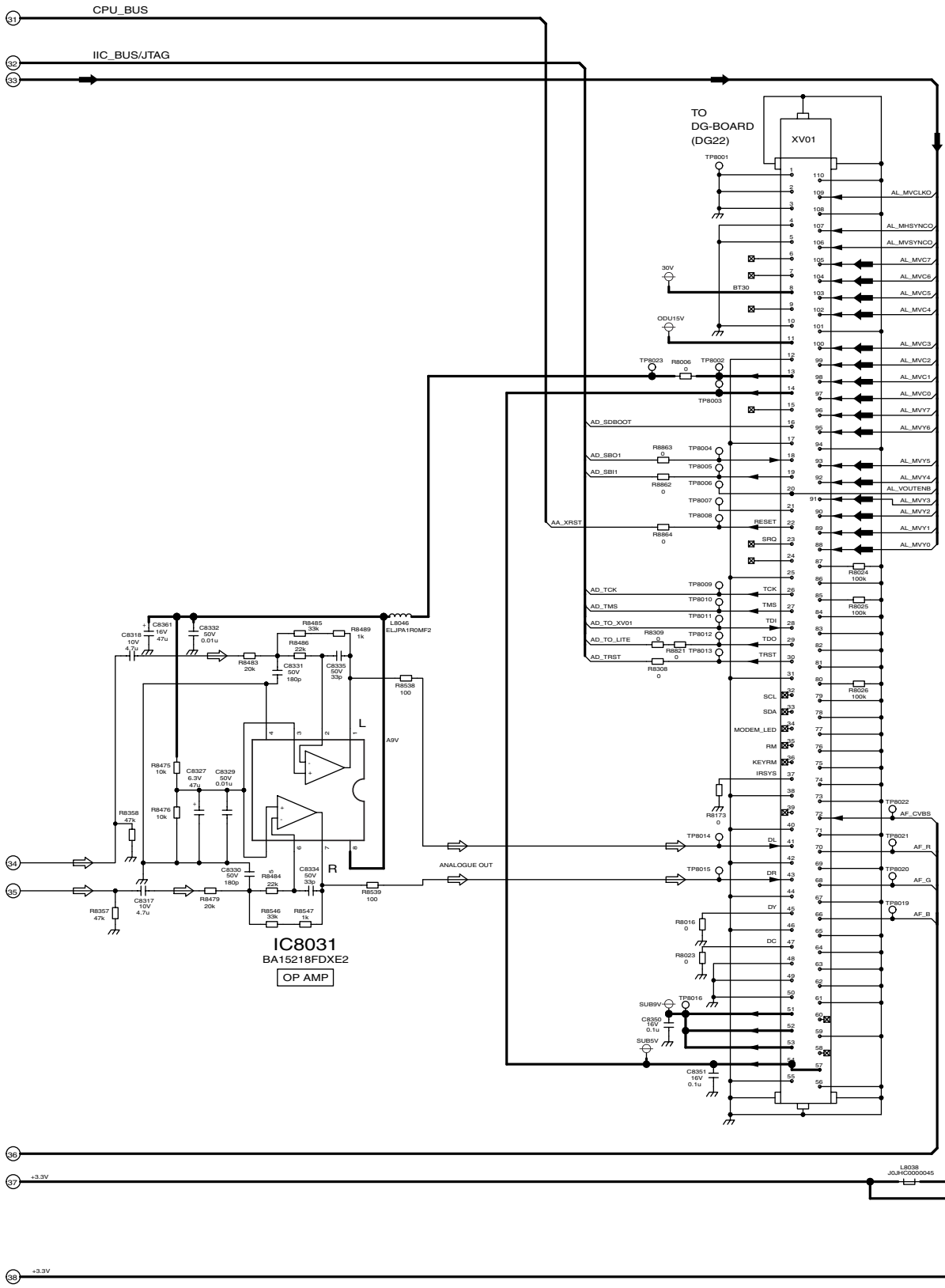


TH-37/42PE50B
XV-Board (4 of 5) Schematic Diagram



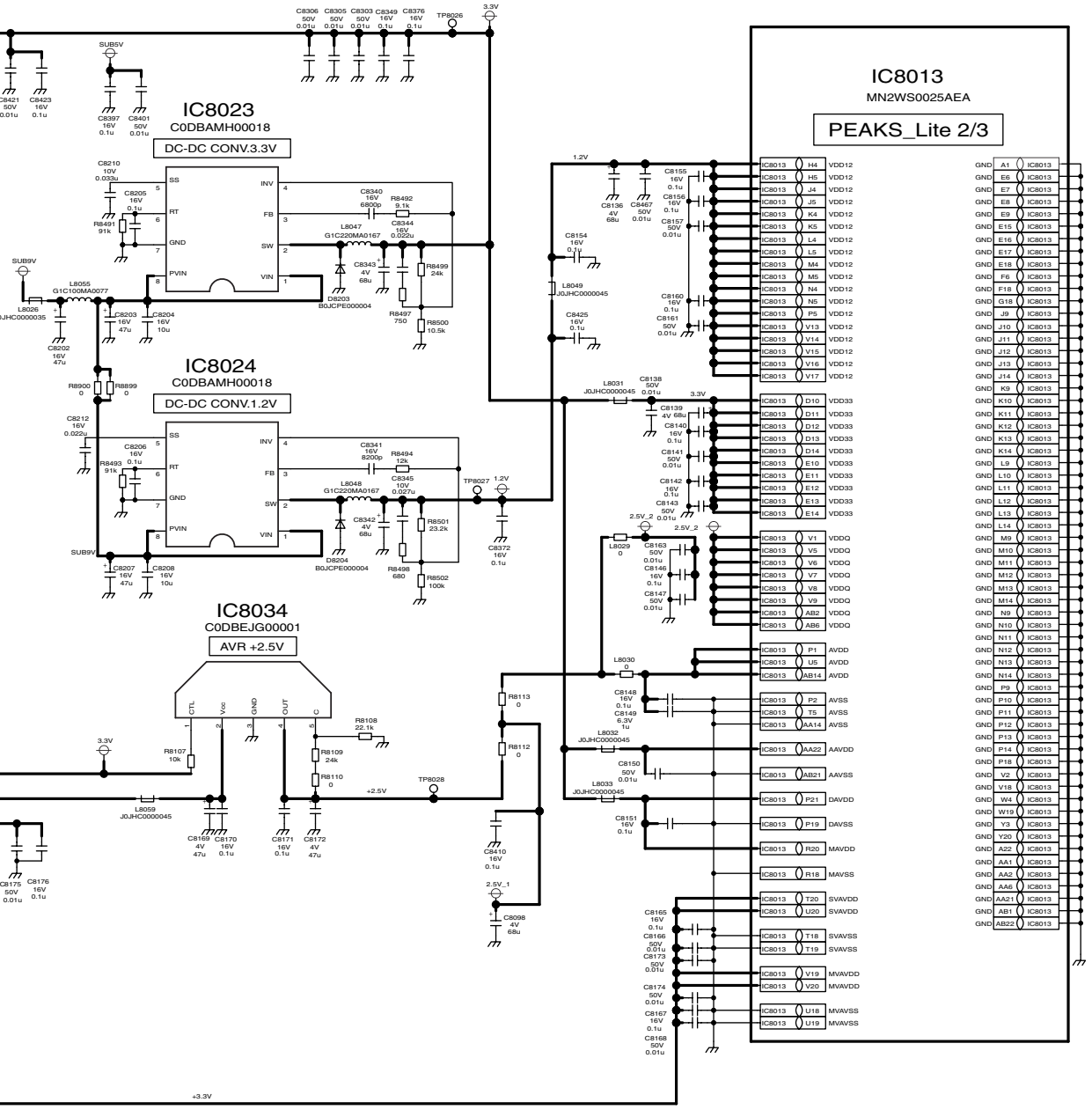
TH-37/42PE50B
XV-Board (4 of 5) Schematic Diagram

14.24. XV-Board (5 of 5) Schematic Diagram (PE50B)



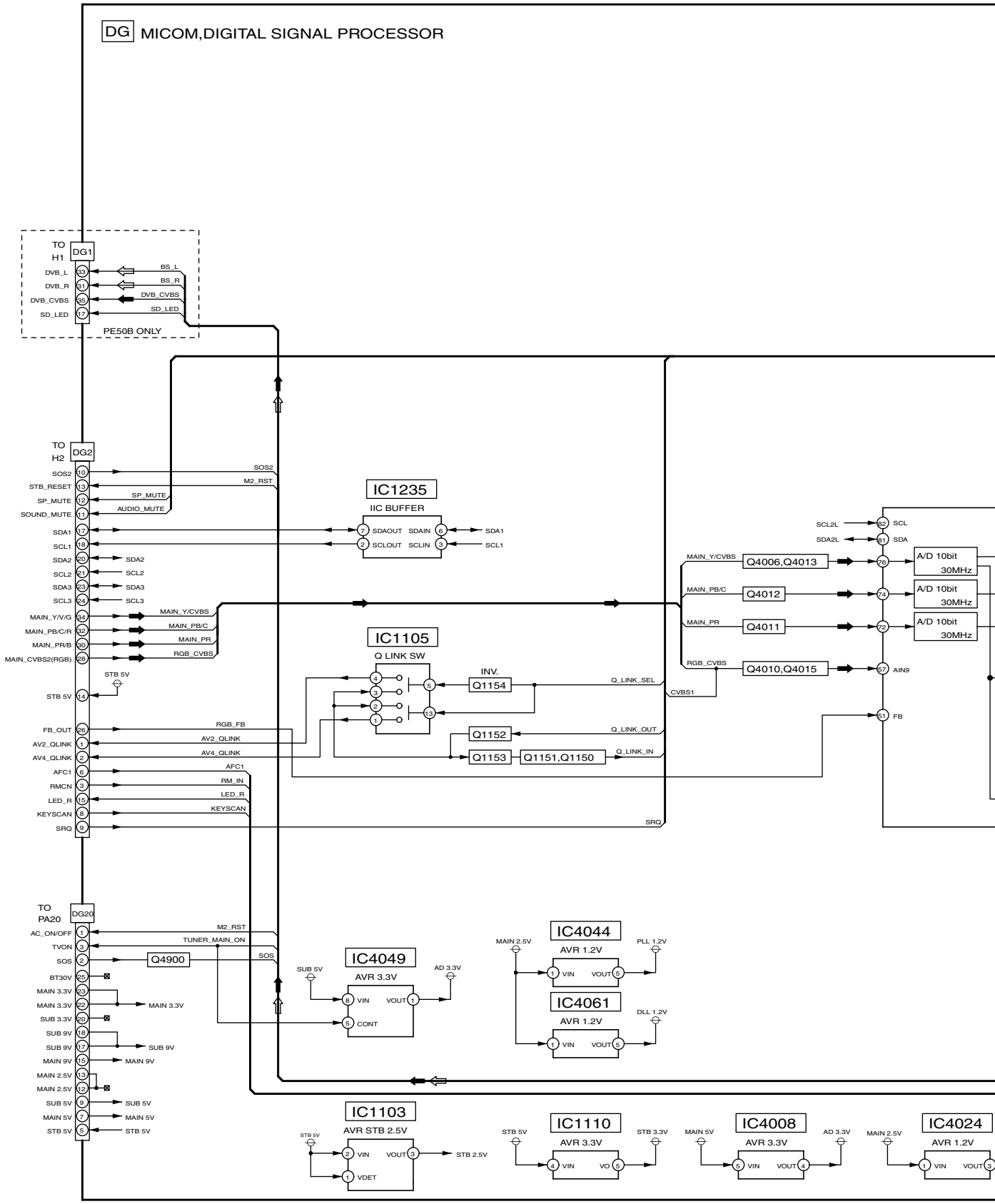
TH-37/42PE50B
XV-Board (5 of 5) Schematic Diagram

XV-BOARD TNP0EXV01AC (5/5)

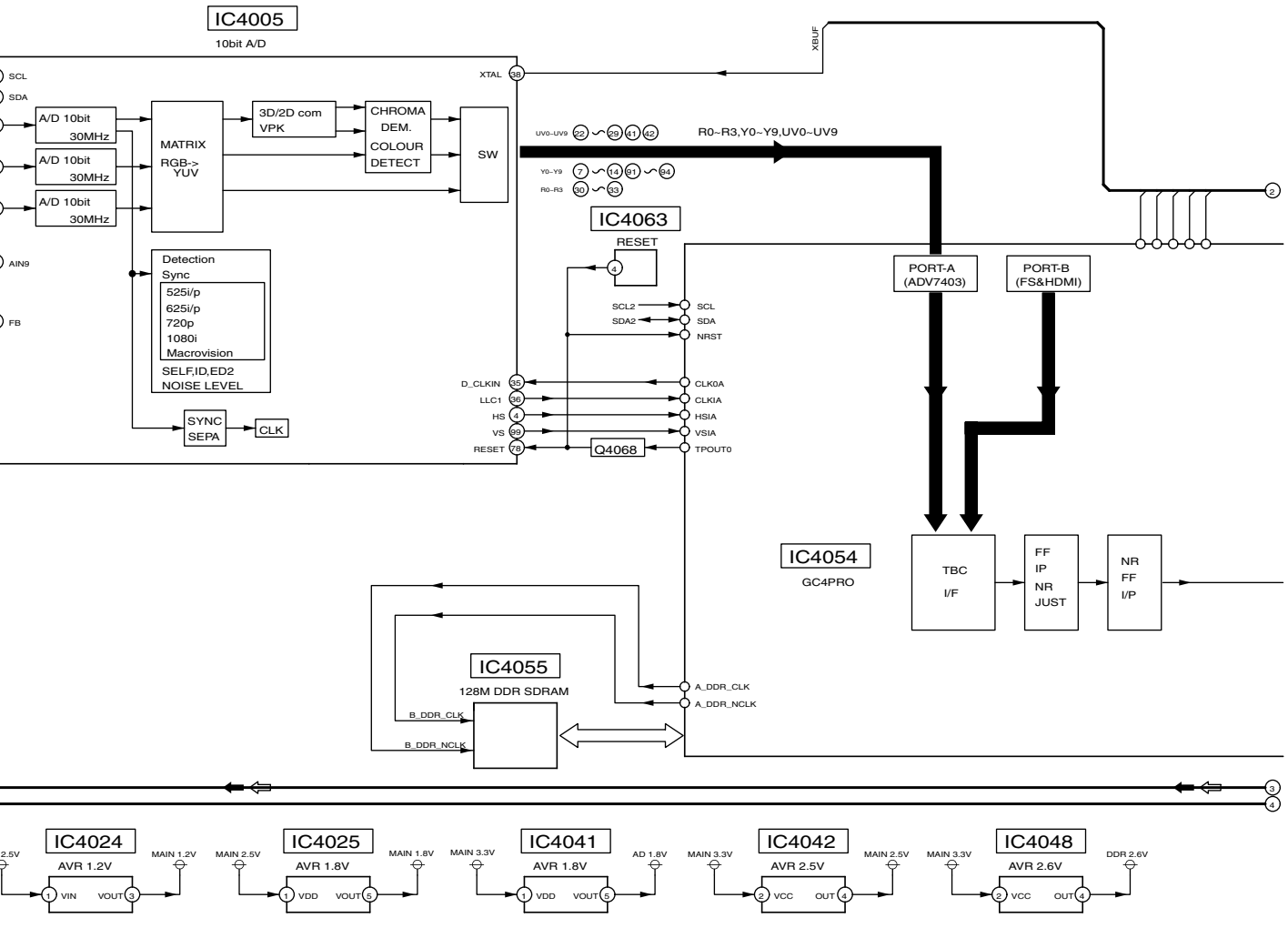


TH-37/42PE50B
XV-Board (5 of 5) Schematic Diagram

14.25. DG-Board (1 of 2) Block Diagram

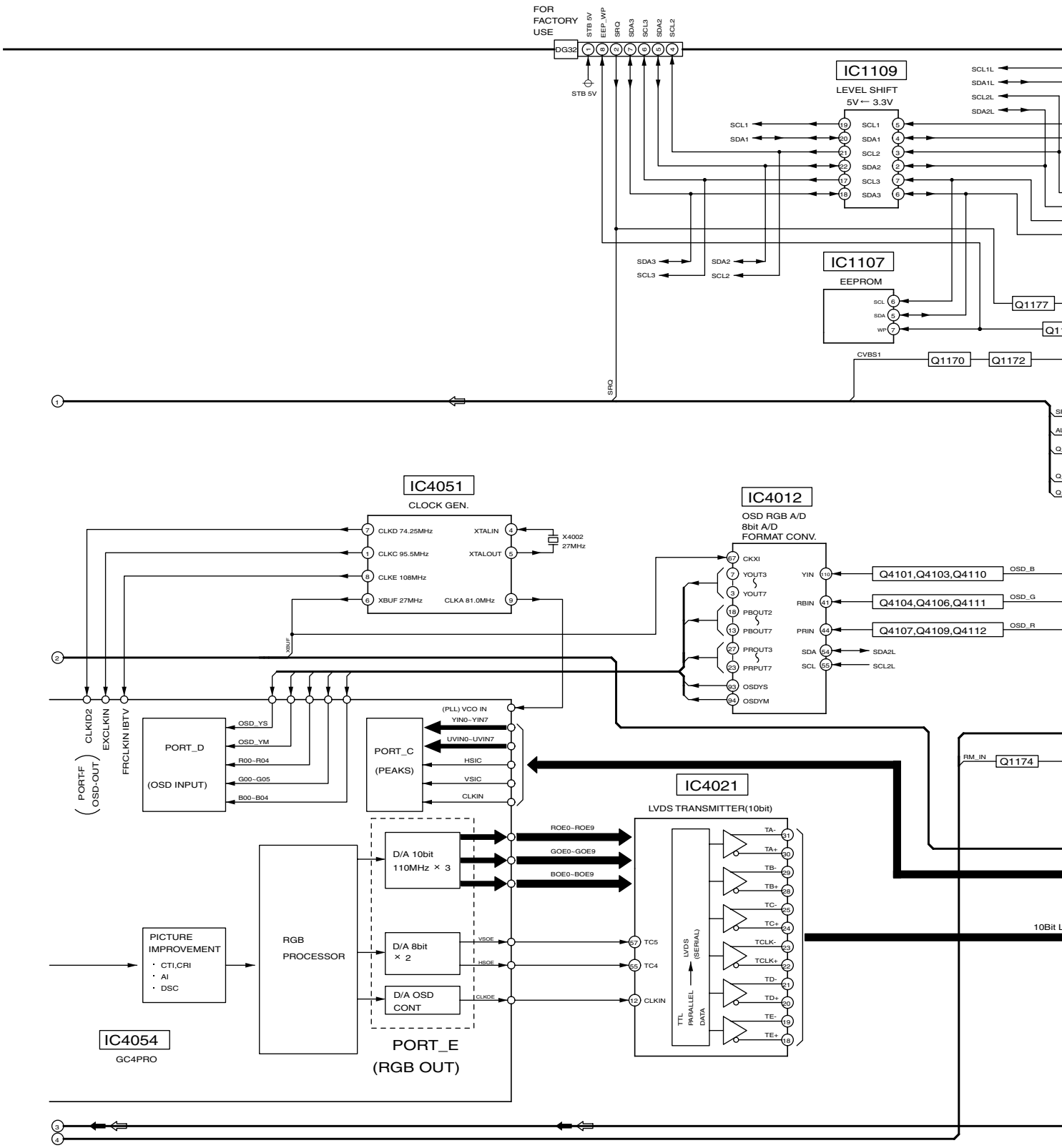


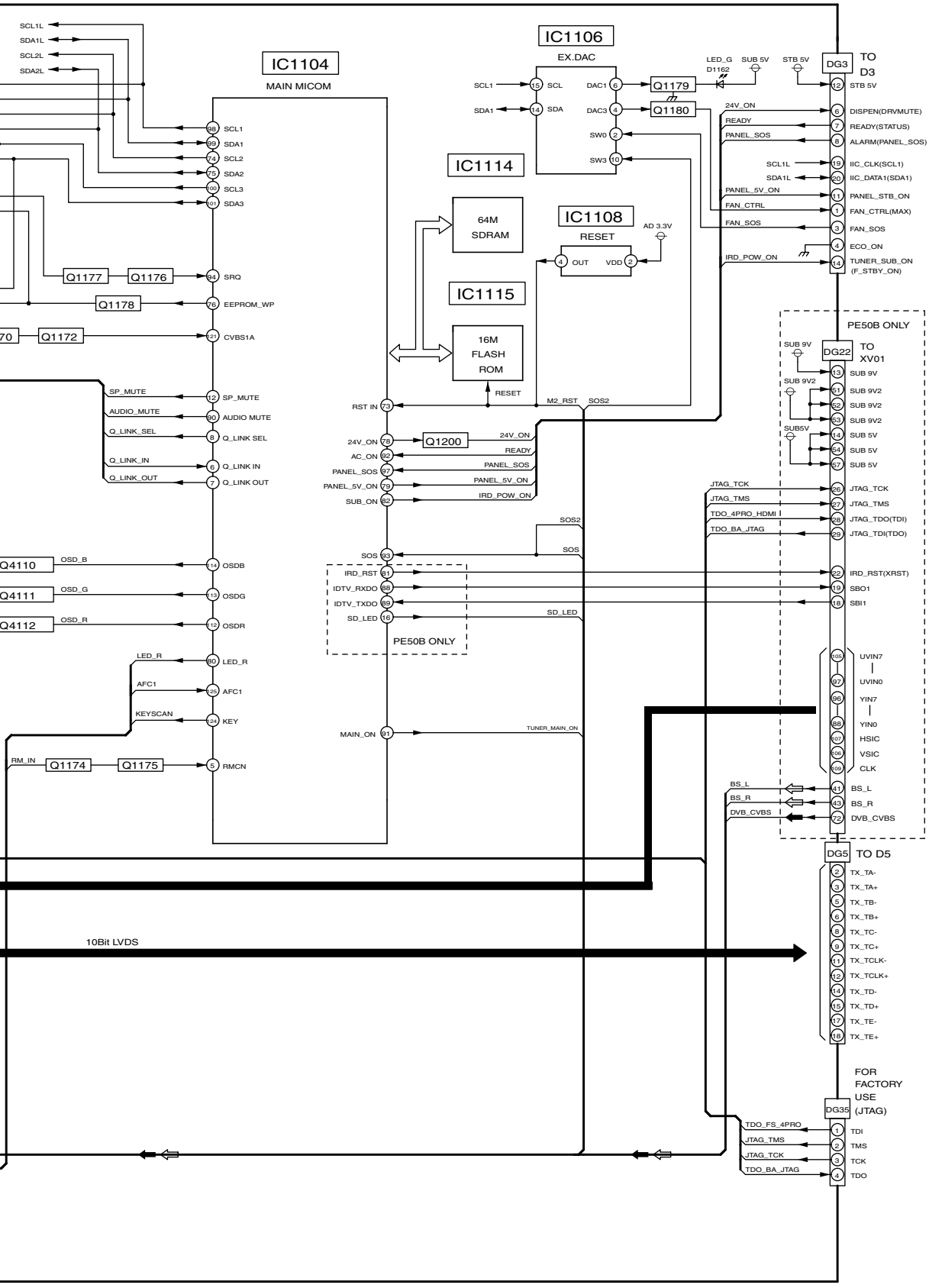
TH-37/42PA50E, TH-37/42PE50B
DG-Board (1 of 2) Block Diagram



TH-37/42PA50E, TH-37/42PE50B
DG-Board (1 of 2) Block Diagram

14.26. DG-Board (2 of 2) Block Diagram

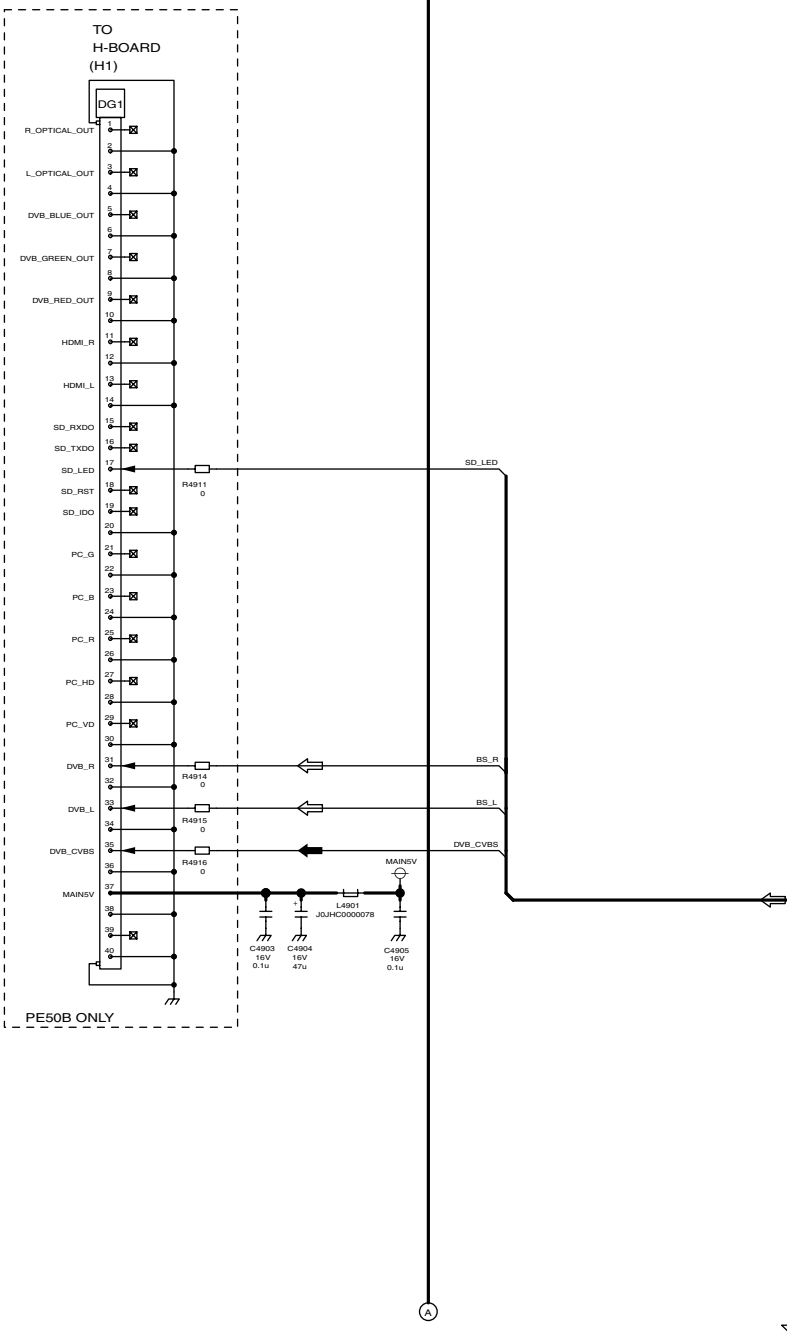




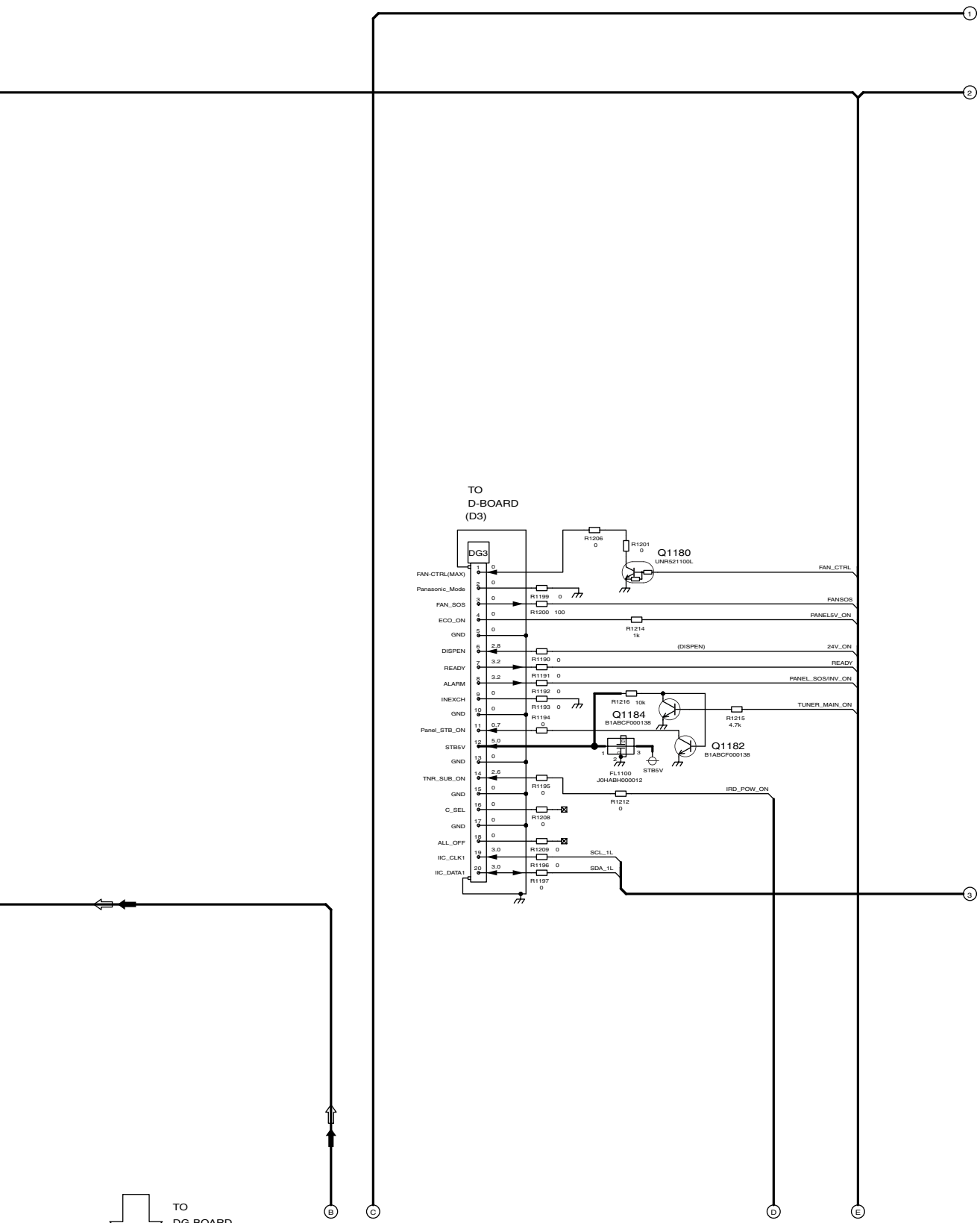
TH-37/42PA50E, TH-37/42PE50B
DG-Board (2 of 2) Block Diagram

14.27. DG-Board (1 of 11) Schematic Diagram

DG-BOARD (1/11)
TNPA3519AB (PA50E)
TNPA3519AD (PE50B)

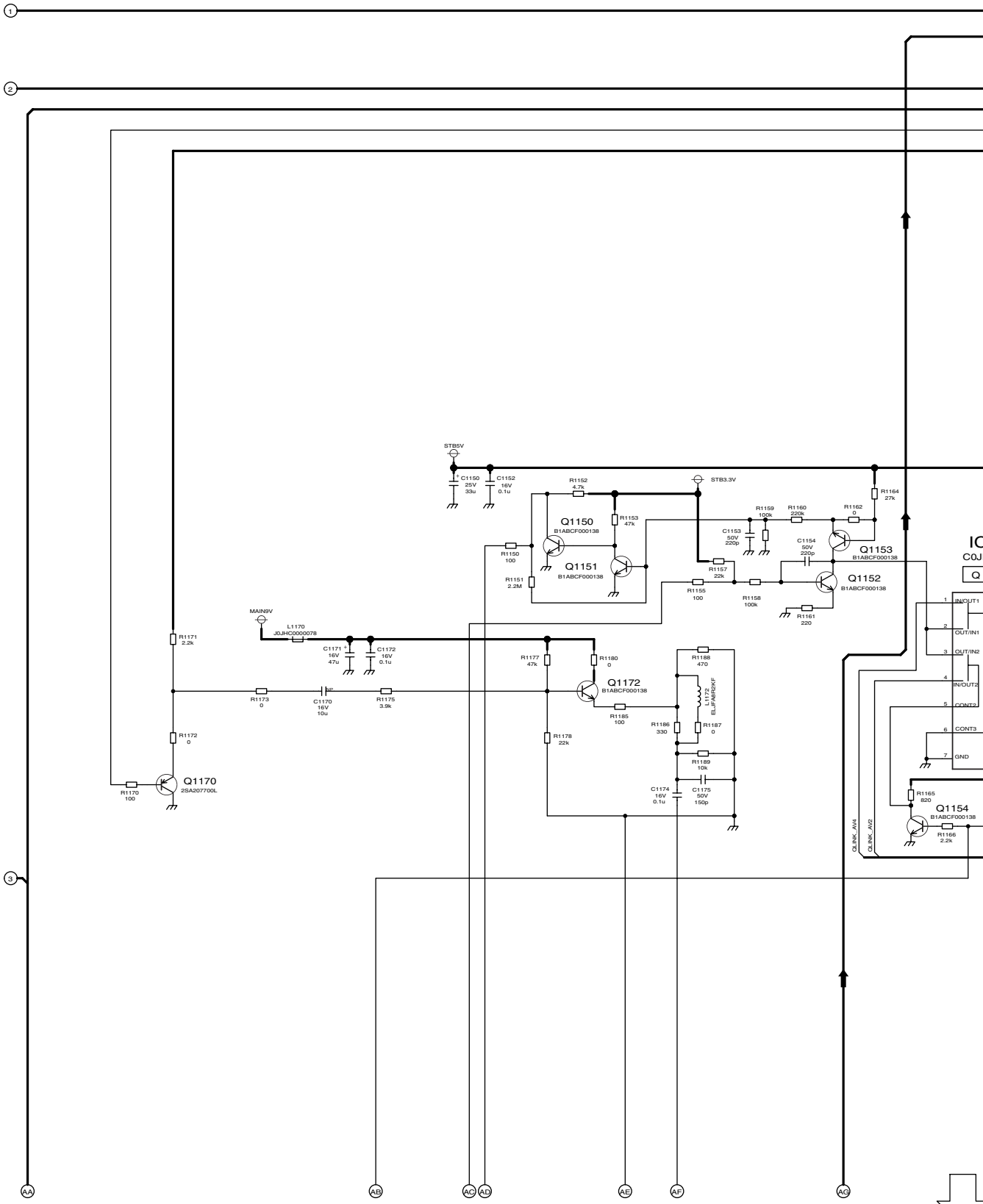


TH-37/42PA50E, TH-37/42PE50B
DG-Board (1 of 11) Schematic Diagram



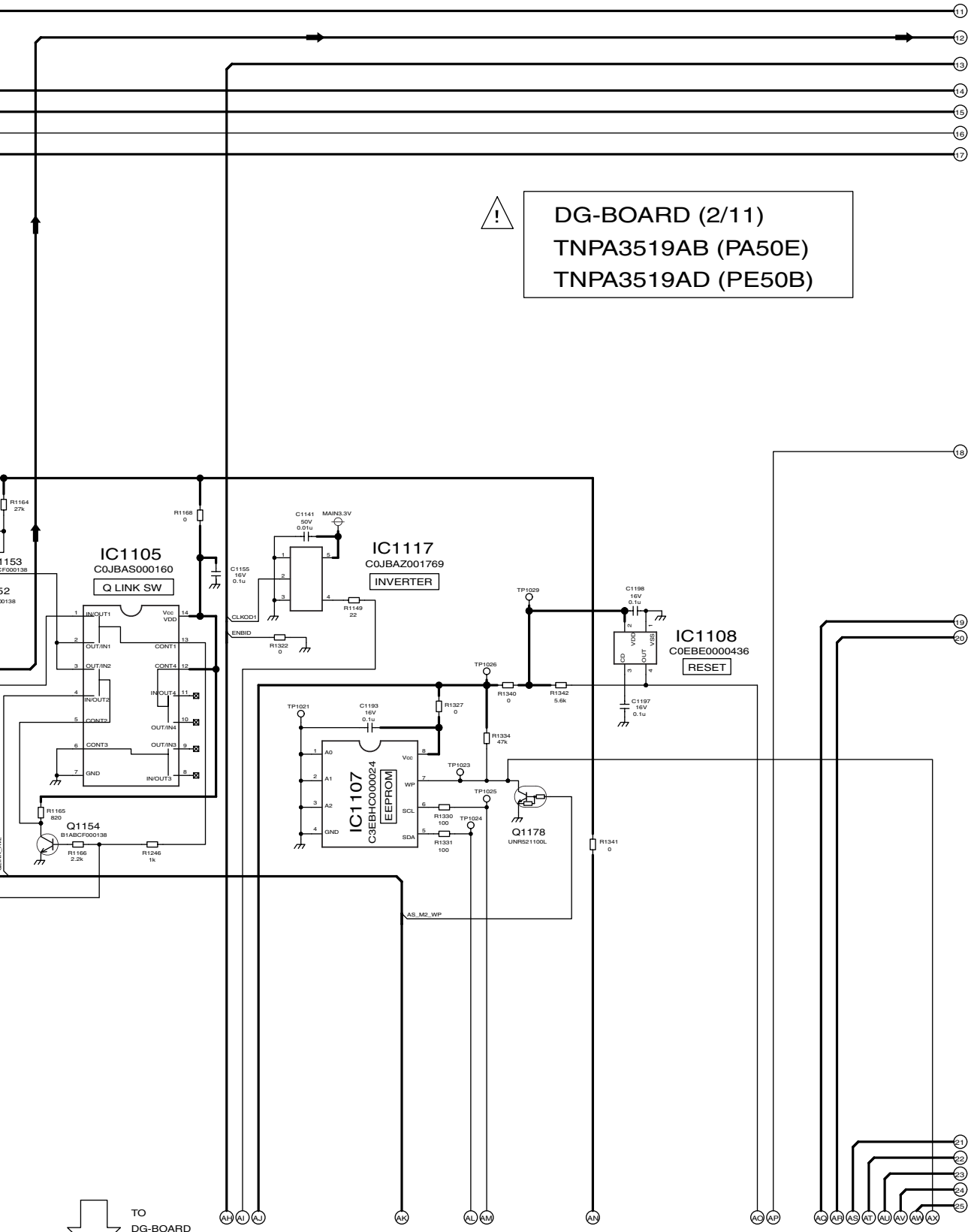
TH-37/42PA50E, TH-37/42PE50B
DG-Board (1 of 11) Schematic Diagram

14.28. DG-Board (2 of 11) Schematic Diagram



TH-37/42PA50E, TH-37/42PE50B
DG-Board (2 of 11) Schematic Diagram

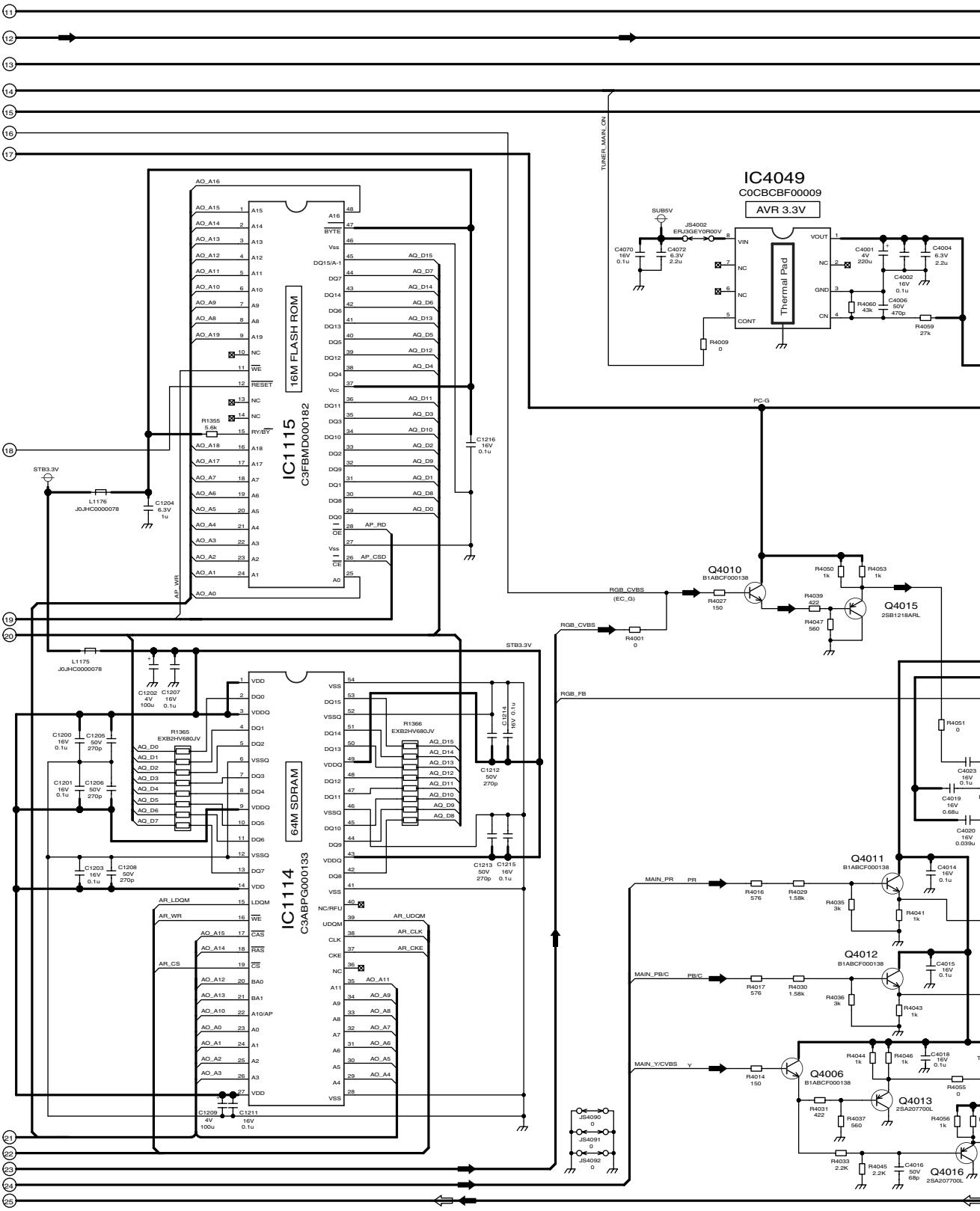
8 9 10 11 12



TH-37/42PA50E, TH-37/42PE50B
DG-Board (2 of 11) Schematic Diagram

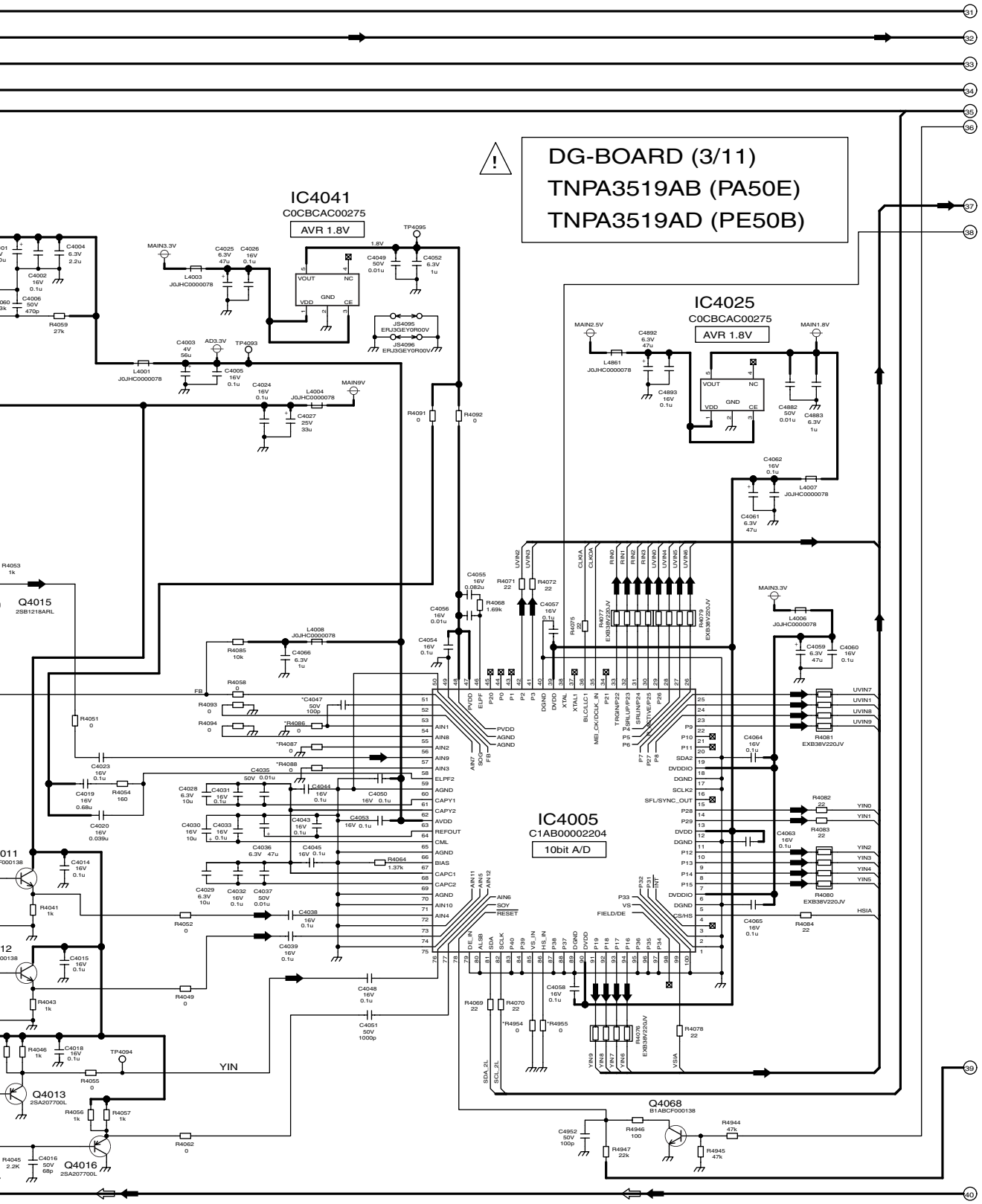
12 13 14 15

14.29. DG-Board (3 of 11) Schematic Diagram



TH-37/42PA50E, TH-37/42PE50B
DG-Board (3 of 11) Schematic Diagram

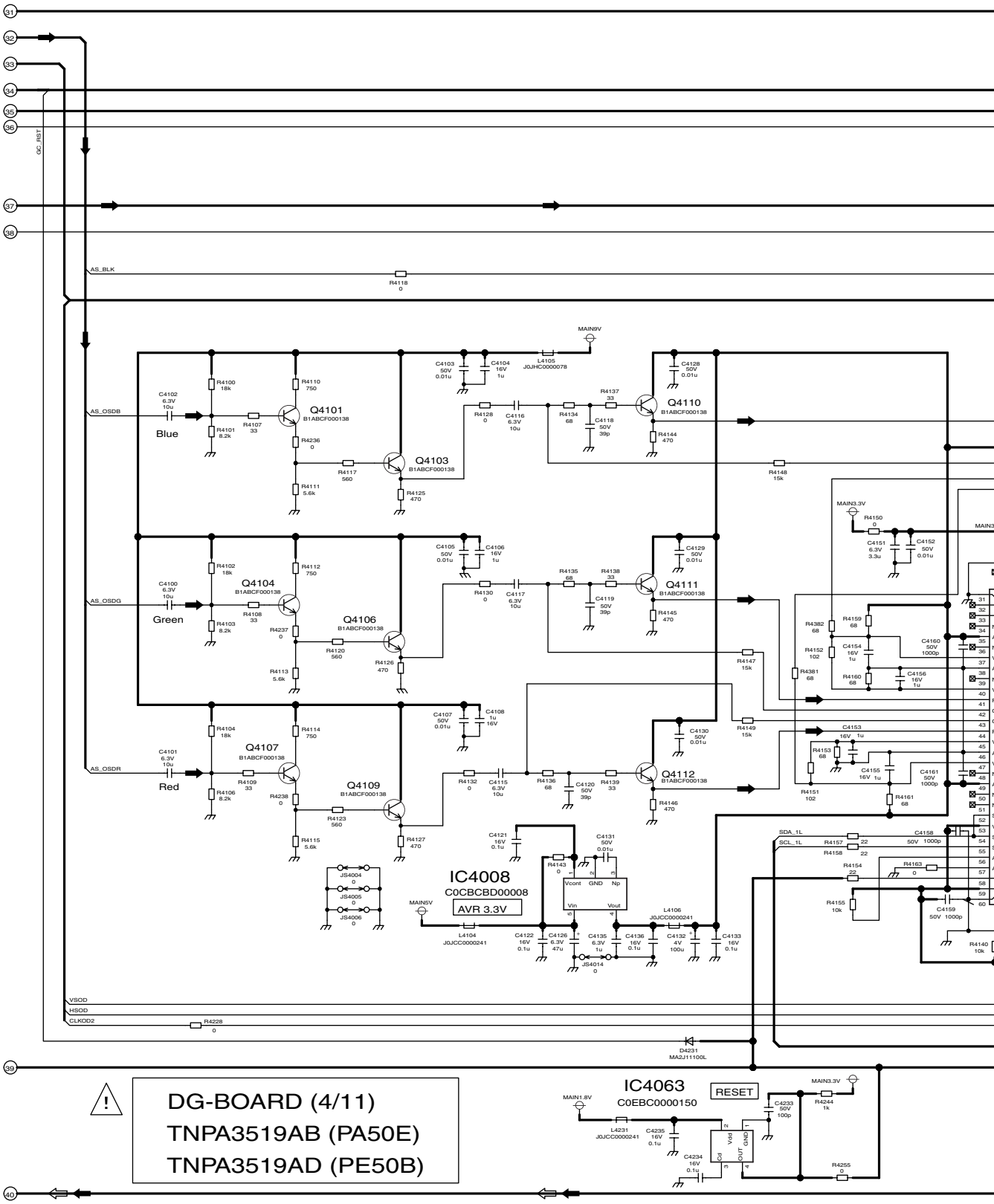
16 17 18 19



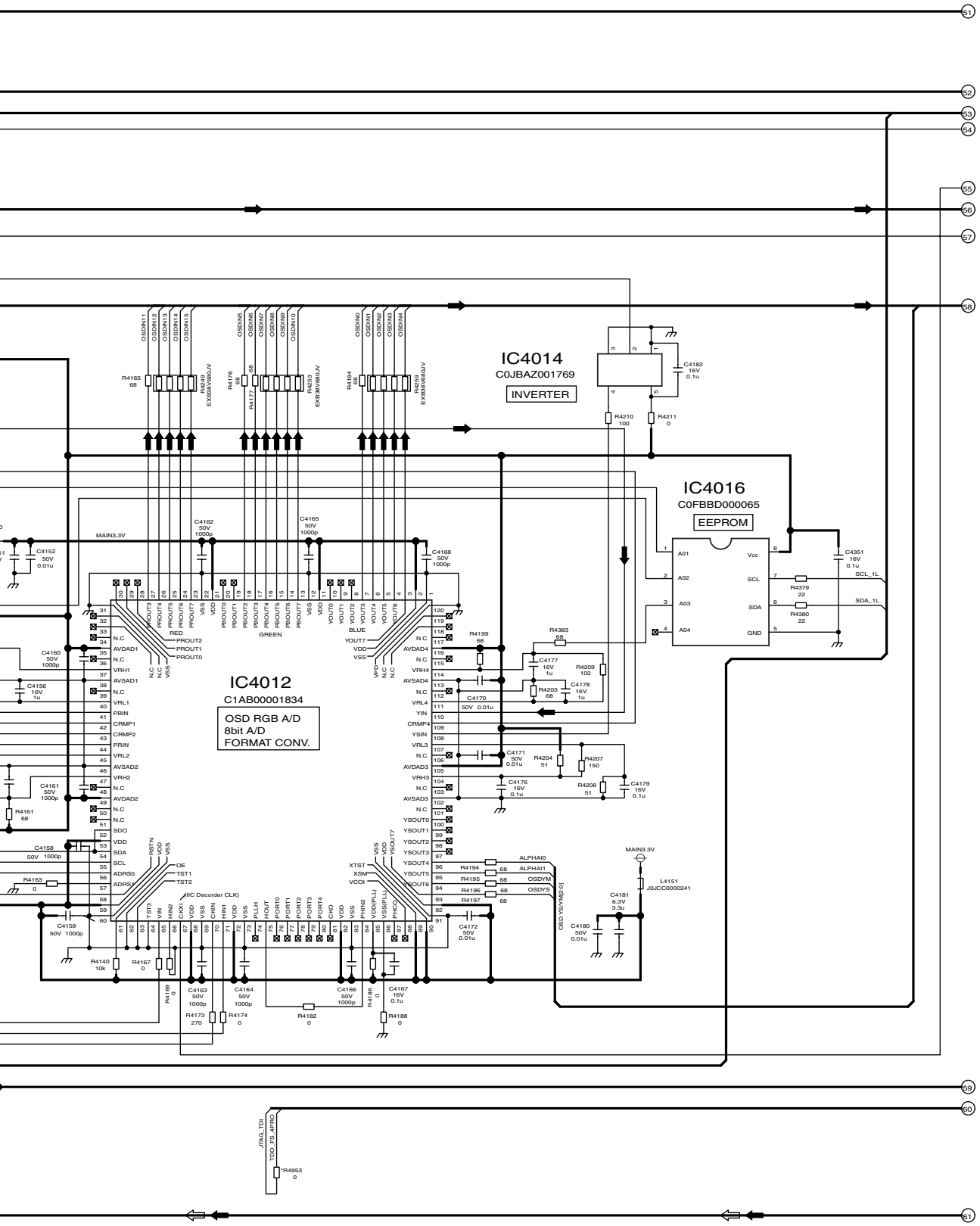
TH-37/42PA50E, TH-37/42PE50B
DG-Board (3 of 11) Schematic Diagram

9 20 21 22 23

14.30. DG-Board (4 of 11) Schematic Diagram



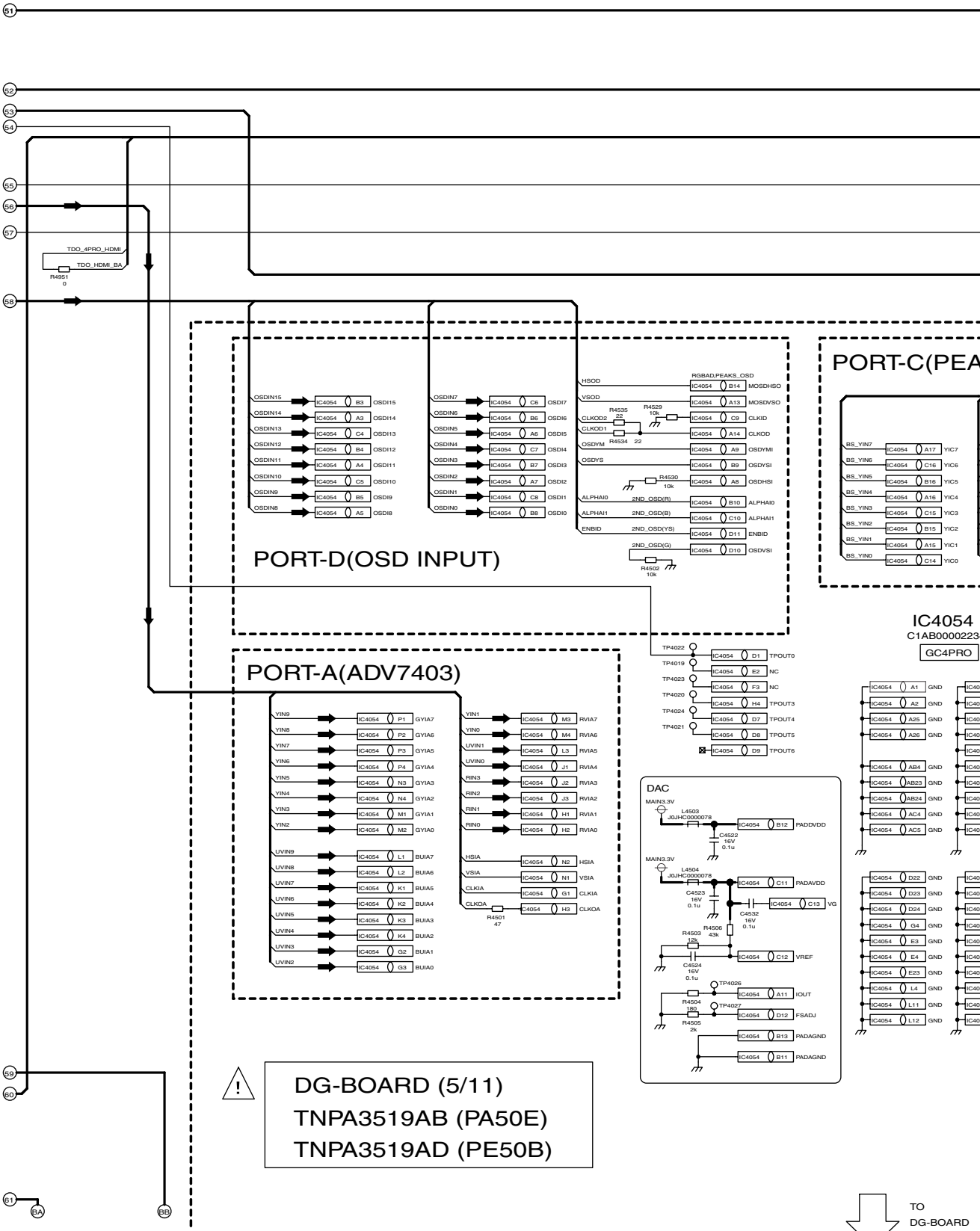
TH-37/42PA50E, TH-37/42PE50B
DG-Board (4 of 11) Schematic Diagram



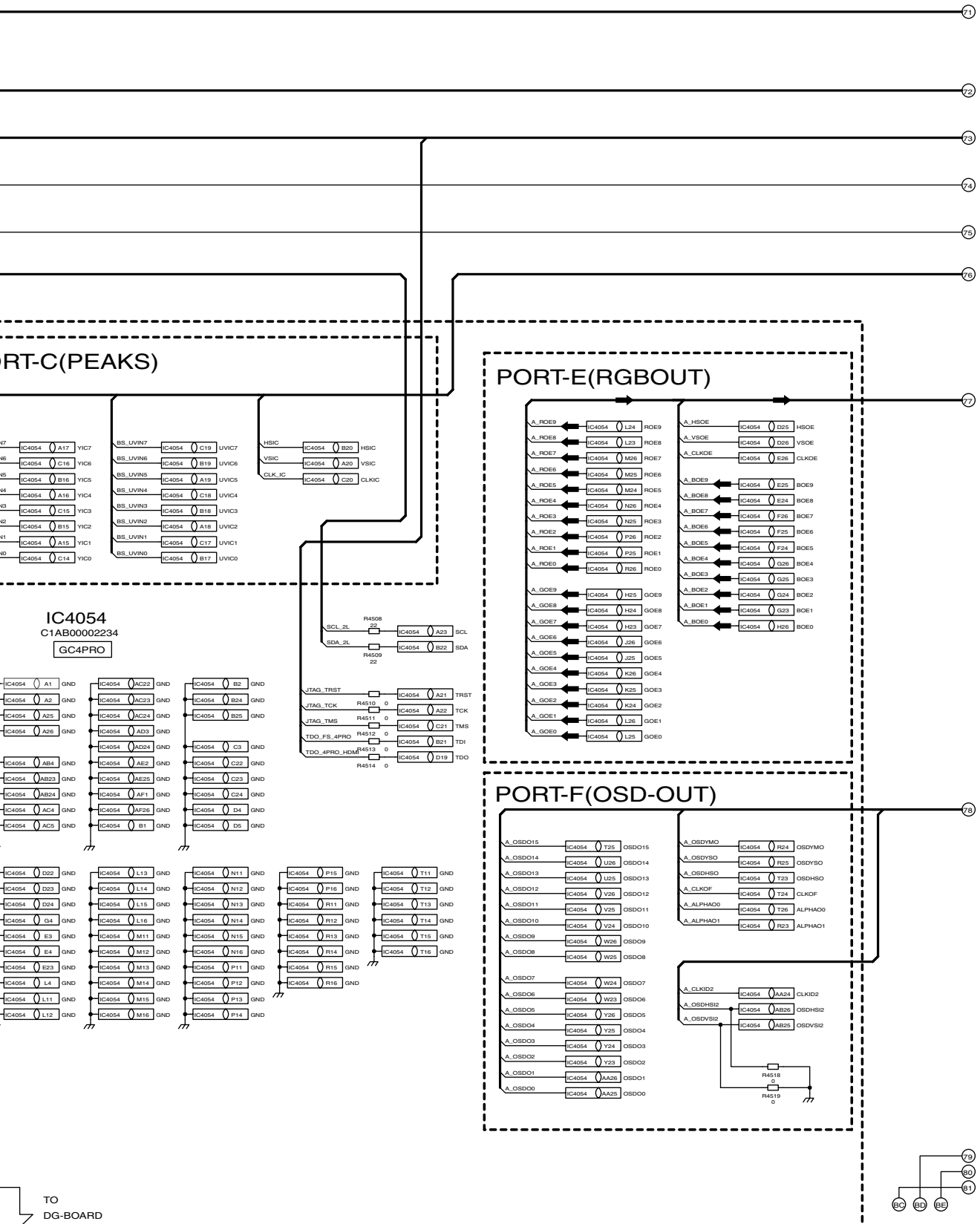
TH-37/42PA50E, TH-37/42PE50B
DG-Board (4 of 11) Schematic Diagram

27 28 29 30

14.31. DG-Board (5 of 11) Schematic Diagram



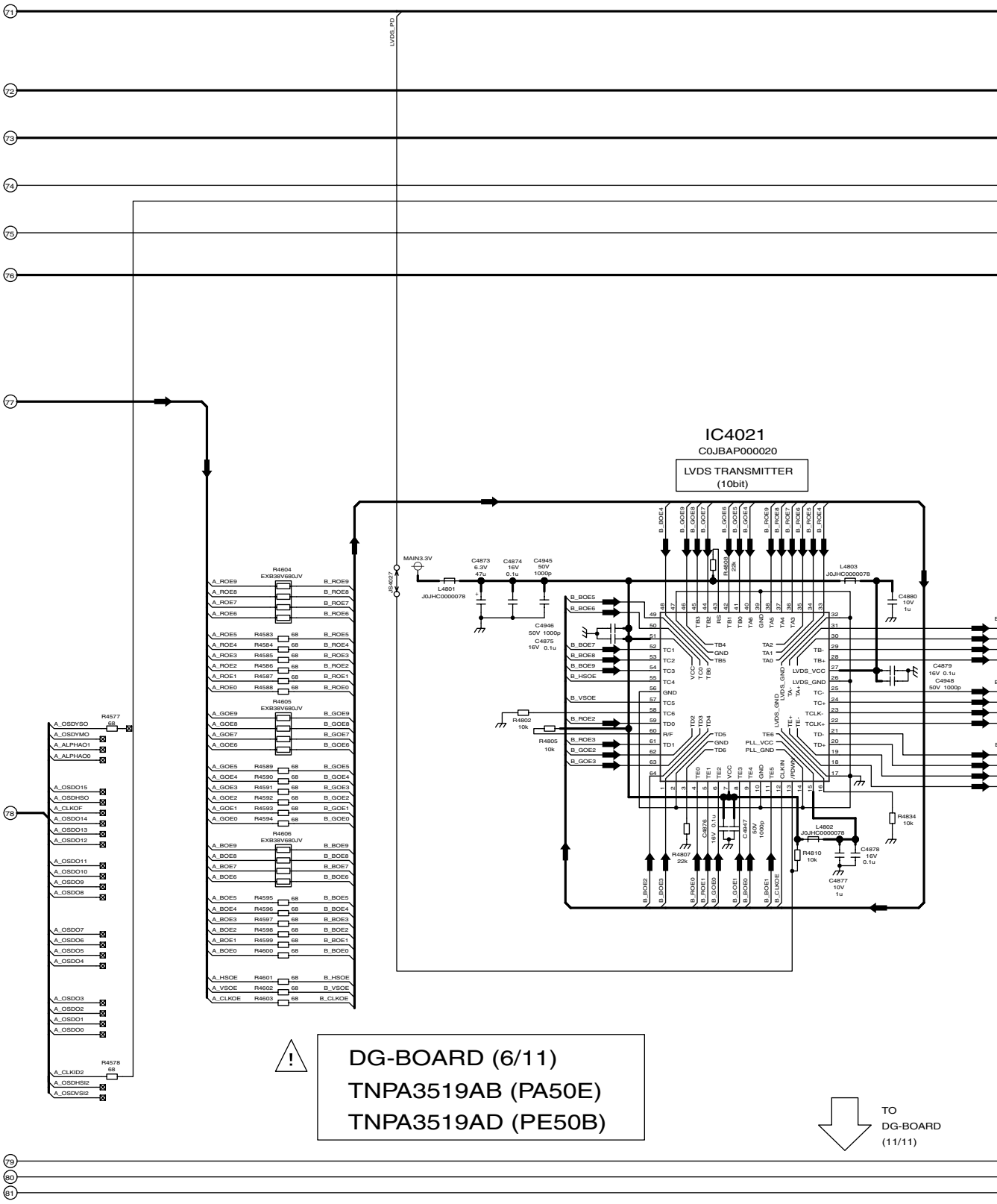
TH-37/42PA50E, TH-37/42PE50B
DG-Board (5 of 11) Schematic Diagram



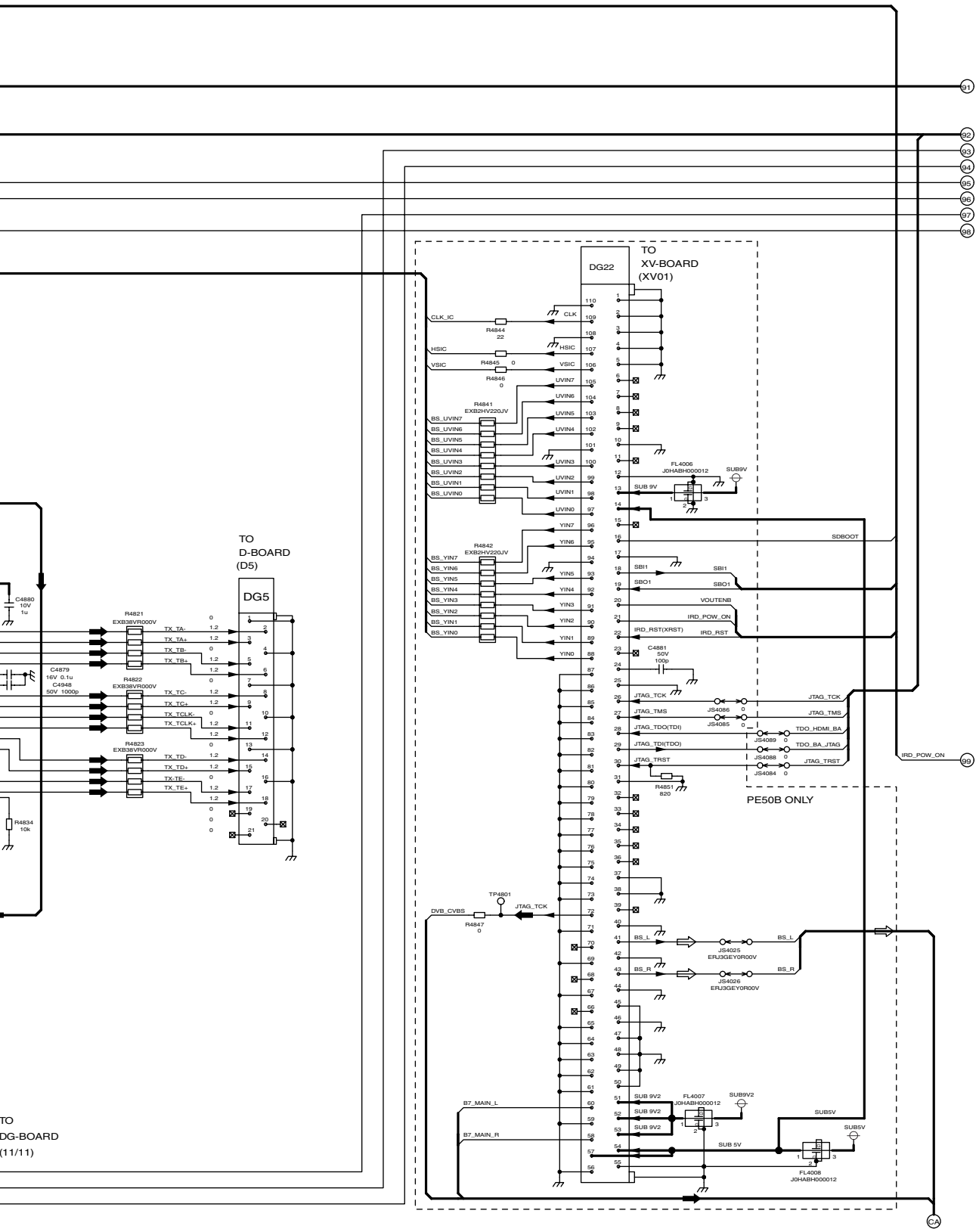
TH-37/42PA50E, TH-37/42PE50B
DG-Board (5 of 11) Schematic Diagram

34 35 36 37 38

14.32. DG-Board (6 of 11) Schematic Diagram

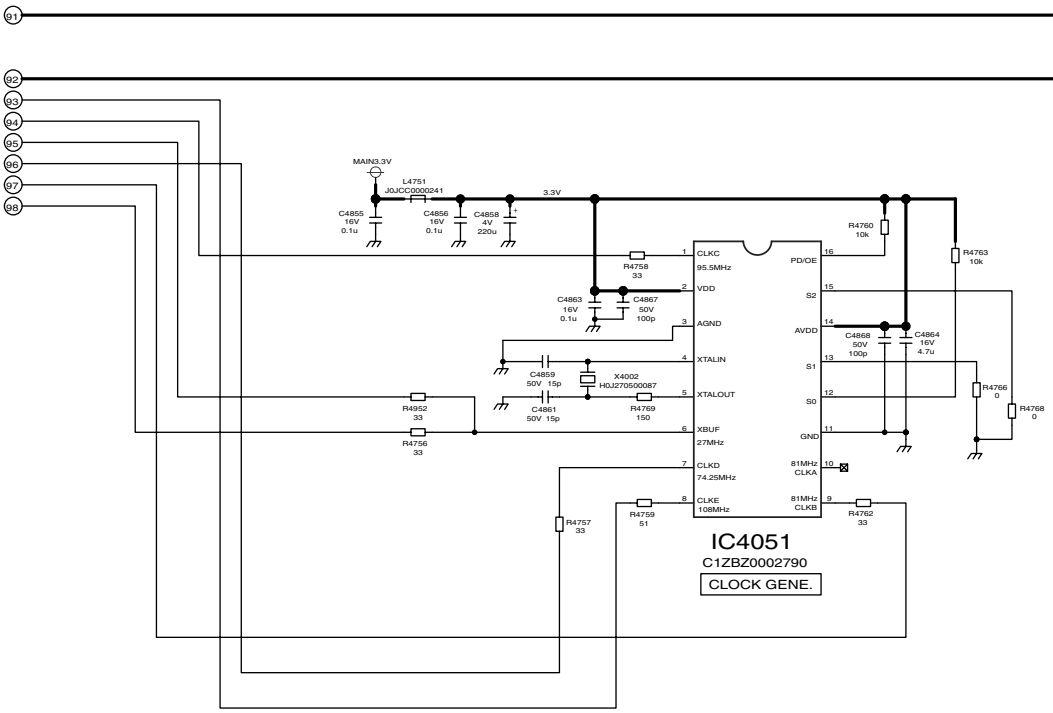


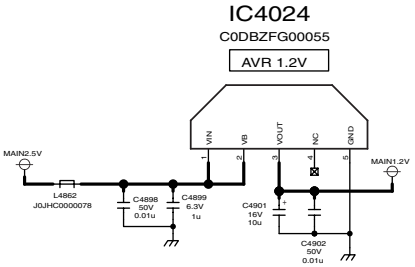
TH-37/42PA50E, TH-37/42PE50B
DG-Board (6 of 11) Schematic Diagram

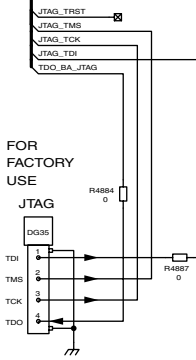


TH-37/42PA50E, TH-37/42PE50B
DG-Board (6 of 11) Schematic Diagram

14.33. DG-Board (7 of 11) Schematic Diagram

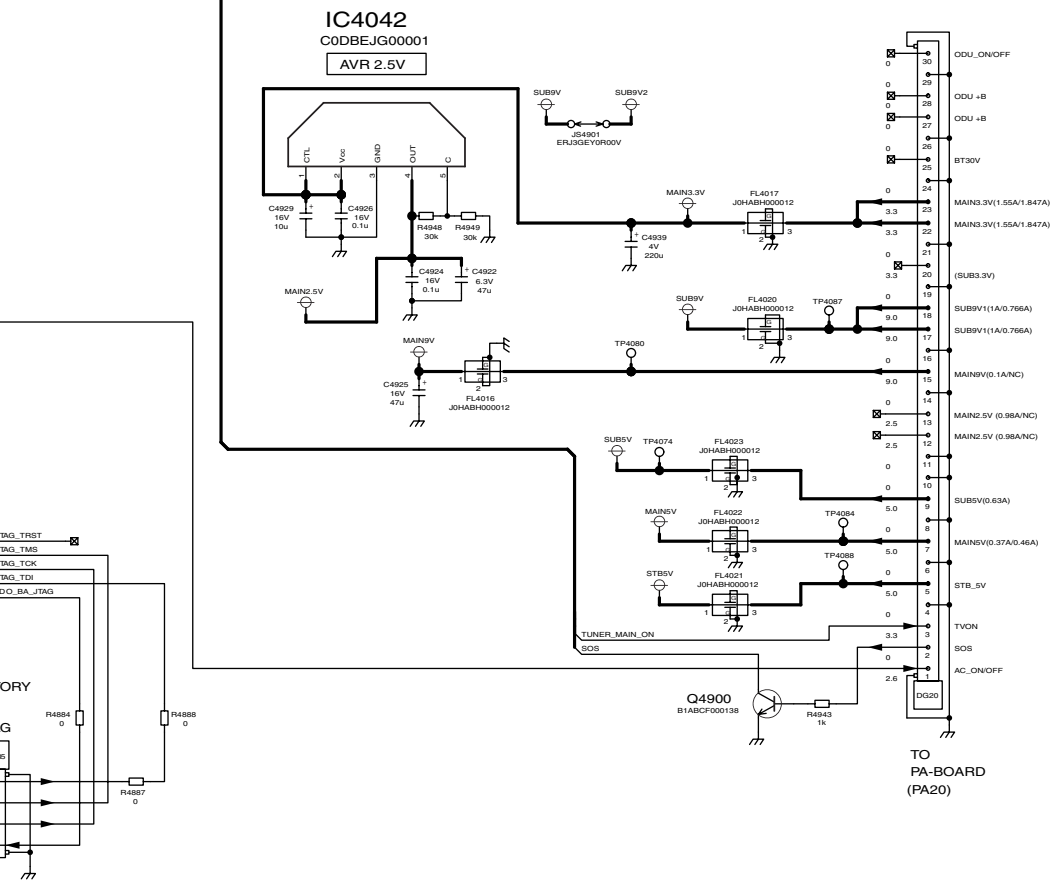






DG-BOARD (7/11)
TNPA3519AB (PA50E)
TNPA3519AD (PE50B)

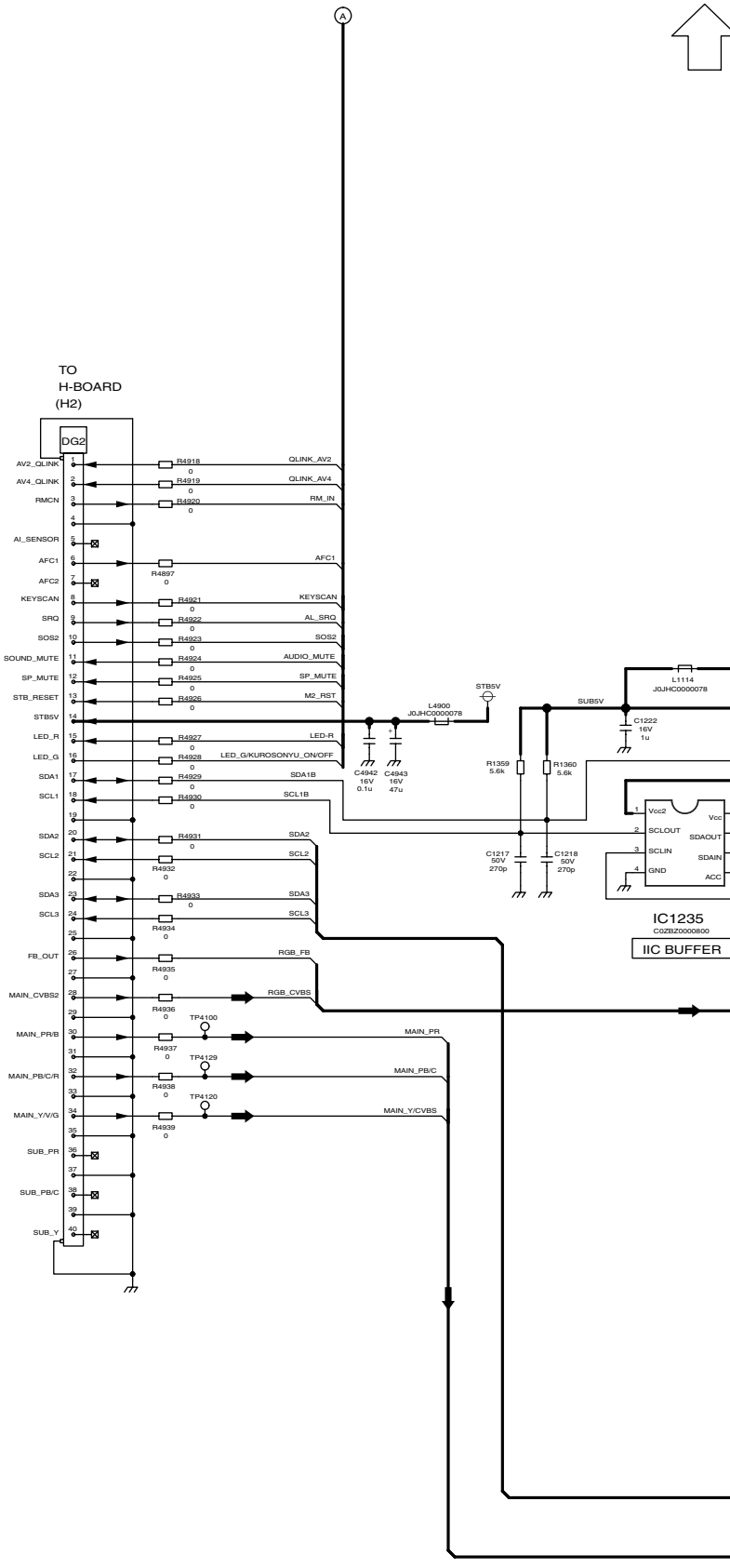
TH-37/42PA50E, TH-37/42PE50B
DG-Board (7 of 11) Schematic Diagram



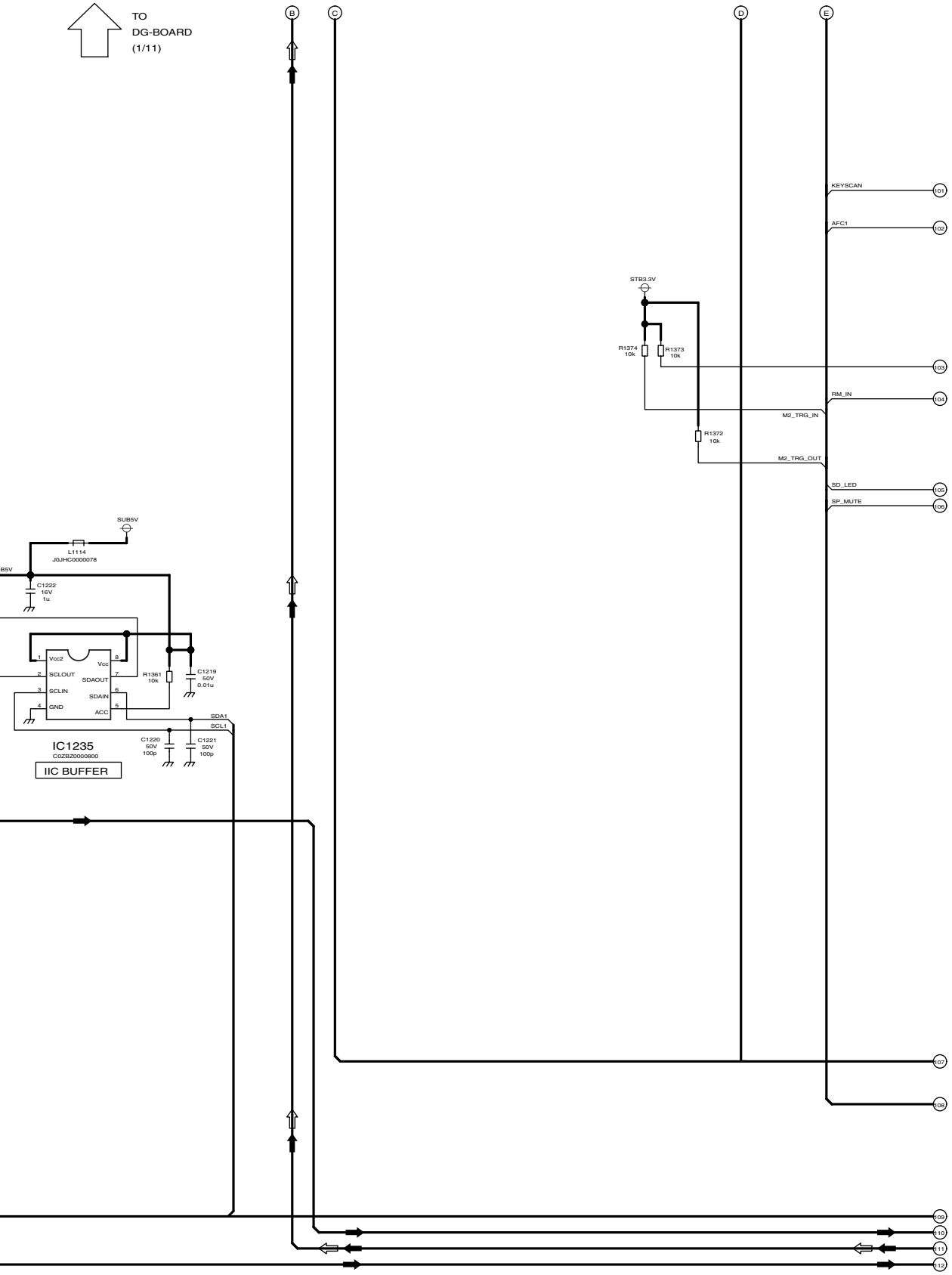
TH-37/42PA50E, TH-37/42PE50B
DG-Board (7 of 11) Schematic Diagram

14.34. DG-Board (8 of 11) Schematic Diagram

DG-BOARD (8/11)
TNPA3519AB (PA50E)
TNPA3519AD (PE50B)



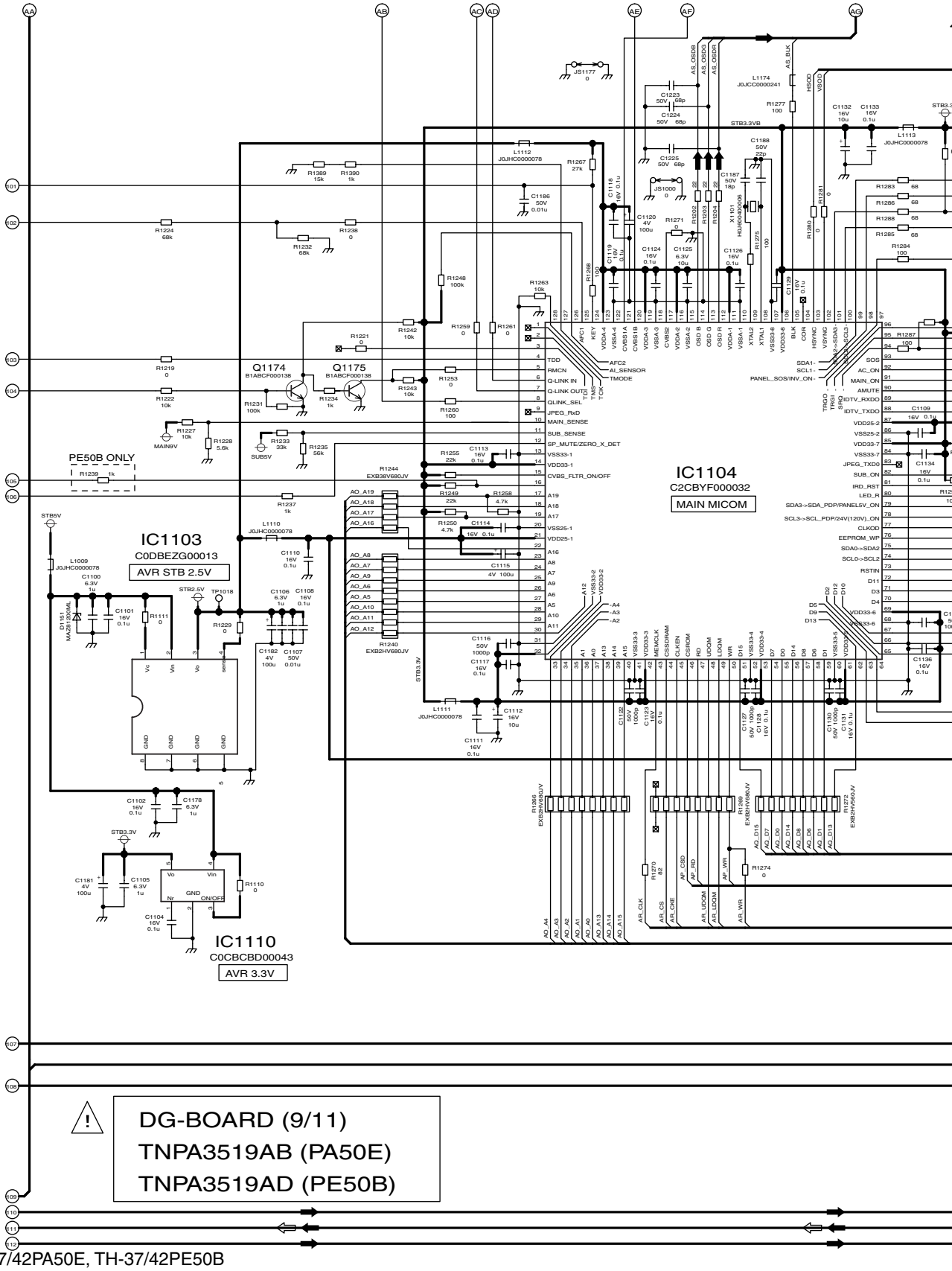
TH-37/42PA50E, TH-37/42PE50B
DG-Board (8 of 11) Schematic Diagram



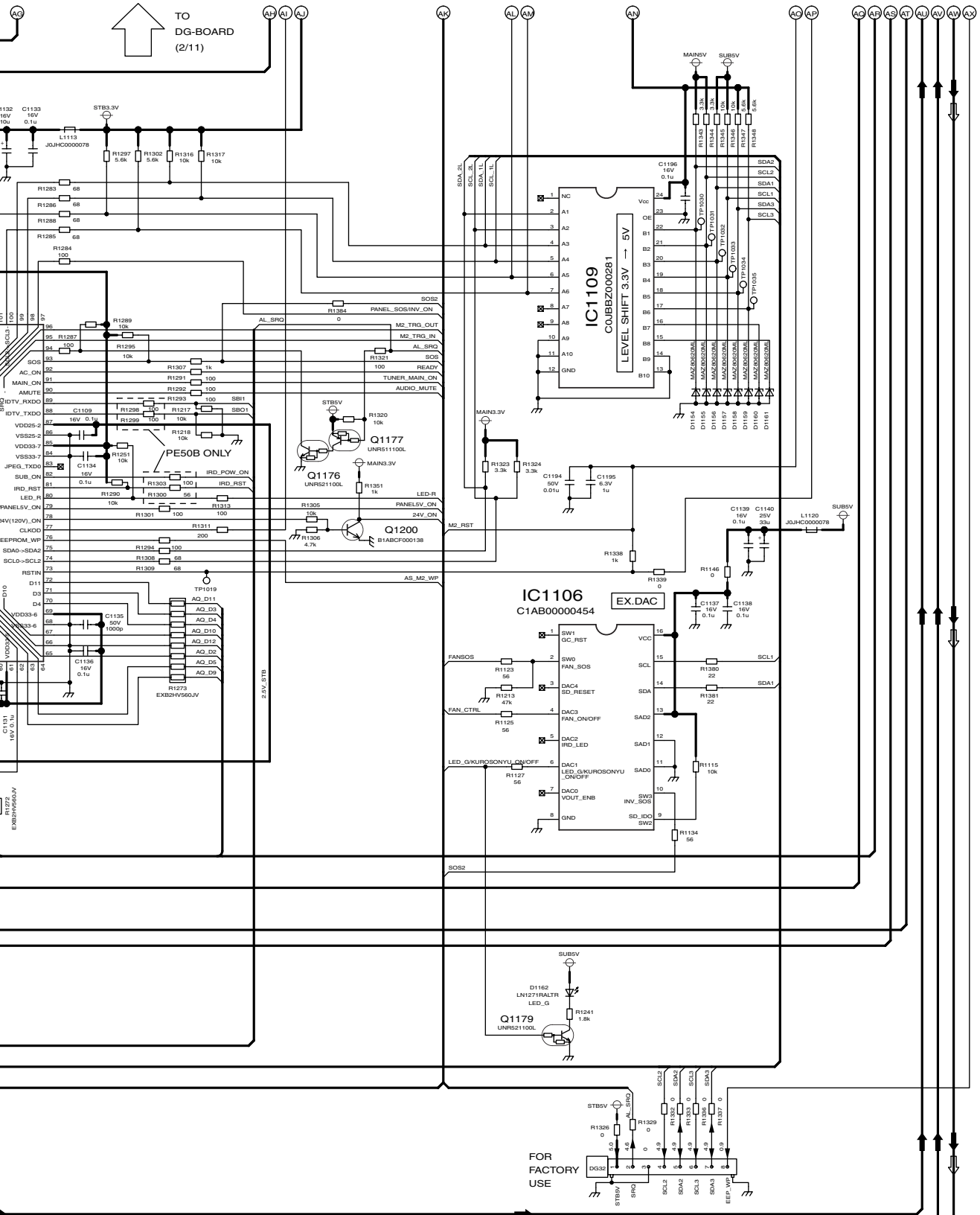
TH-37/42PA50E, TH-37/42PE50B DG-Board (8 of 11) Schematic Diagram

5 6 7 8

14.35. DG-Board (9 of 11) Schematic Diagram



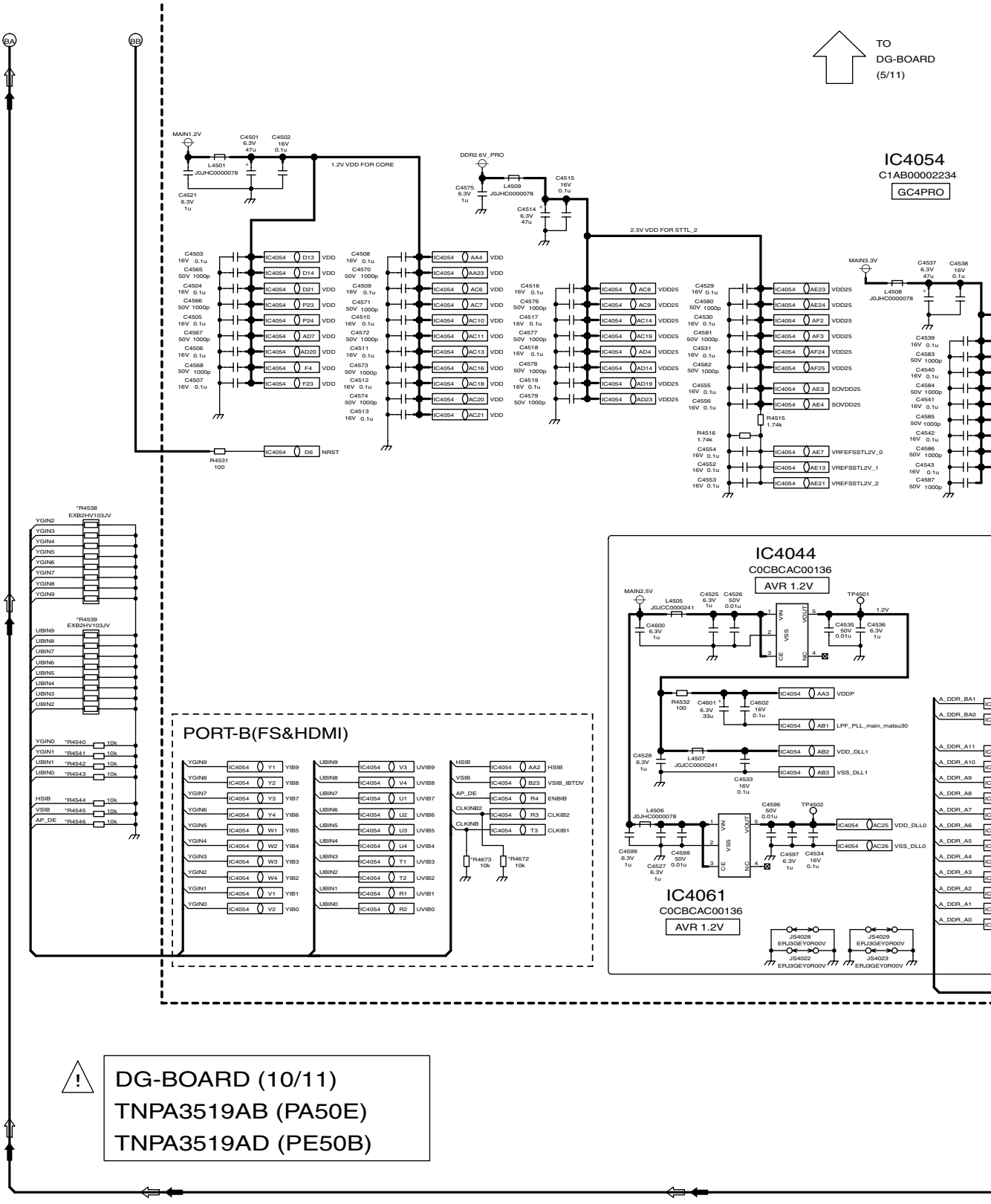
TH-37/42PA50E, TH-37/42PE50B
DG-Board (9 of 11) Schematic Diagram



TH-37/42PA50E, TH-37/42PE50B
DG-Board (9 of 11) Schematic Diagram

12 13 14 15

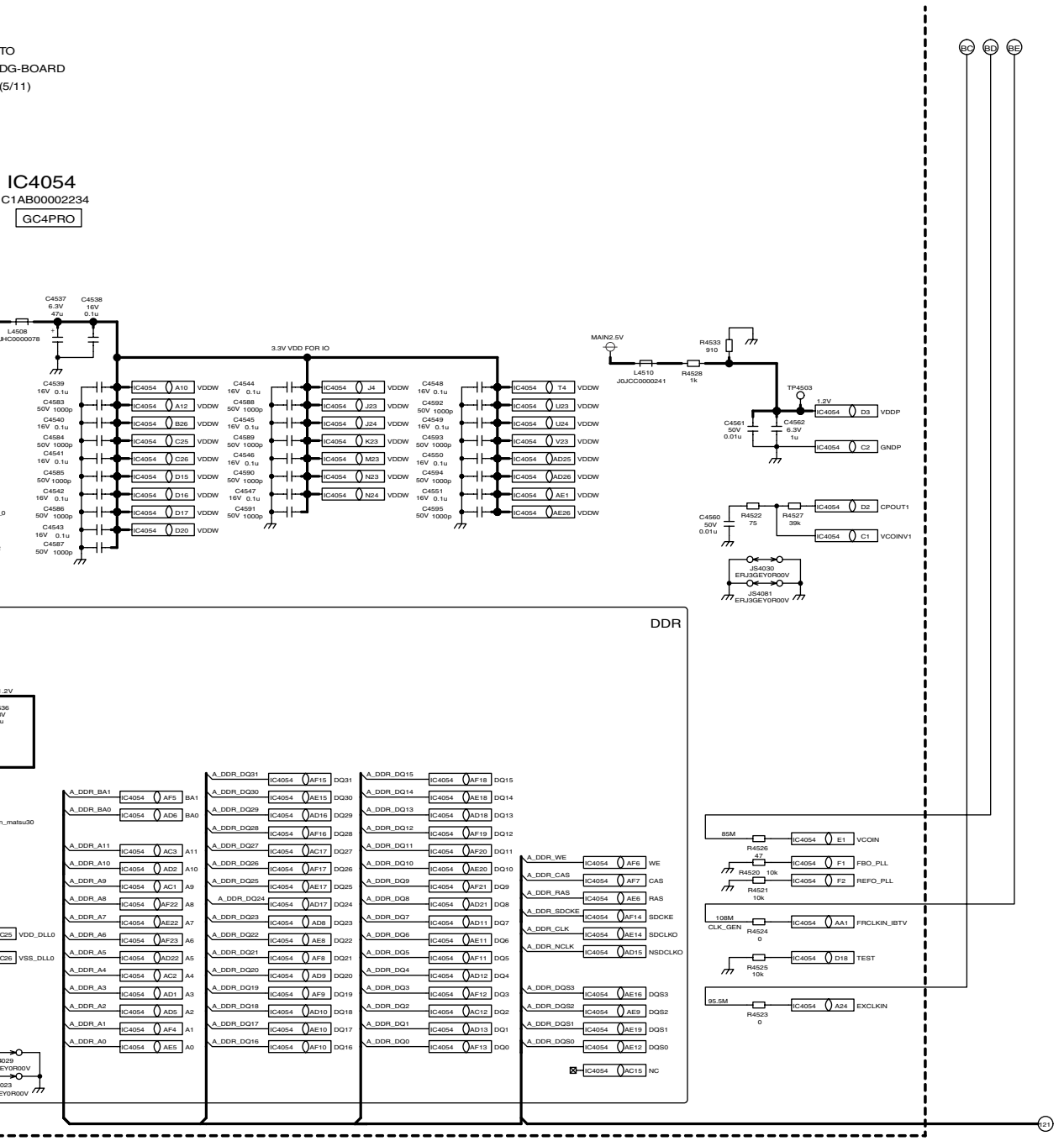
14.36. DG-Board (10 of 11) Schematic Diagram



TH-37/42PA50E, TH-37/42PE50B
DG-Board (10 of 11) Schematic Diagram

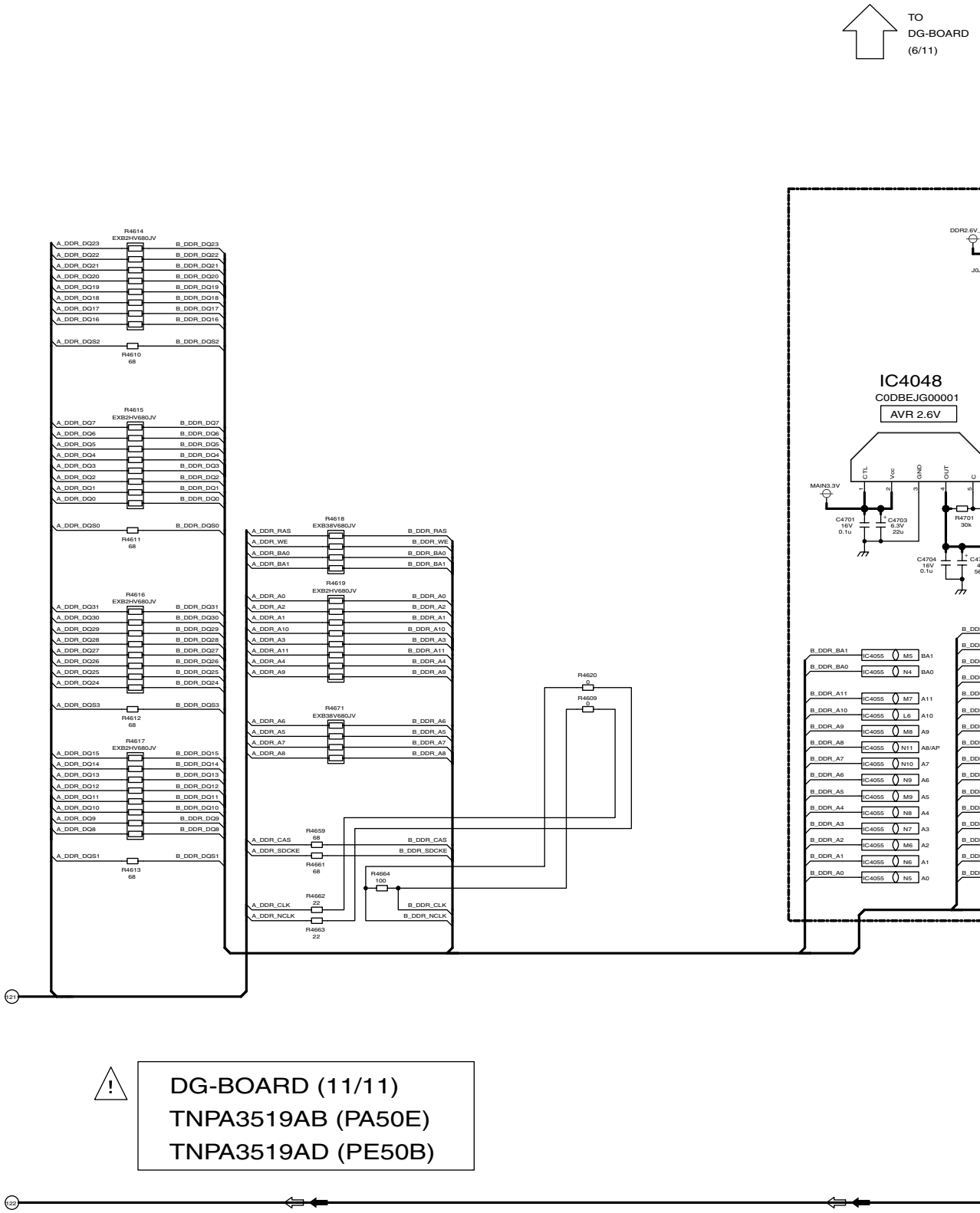
TO
DG-BOARD
(5/11)

IC4054
C1AB00002234
GC4PRO

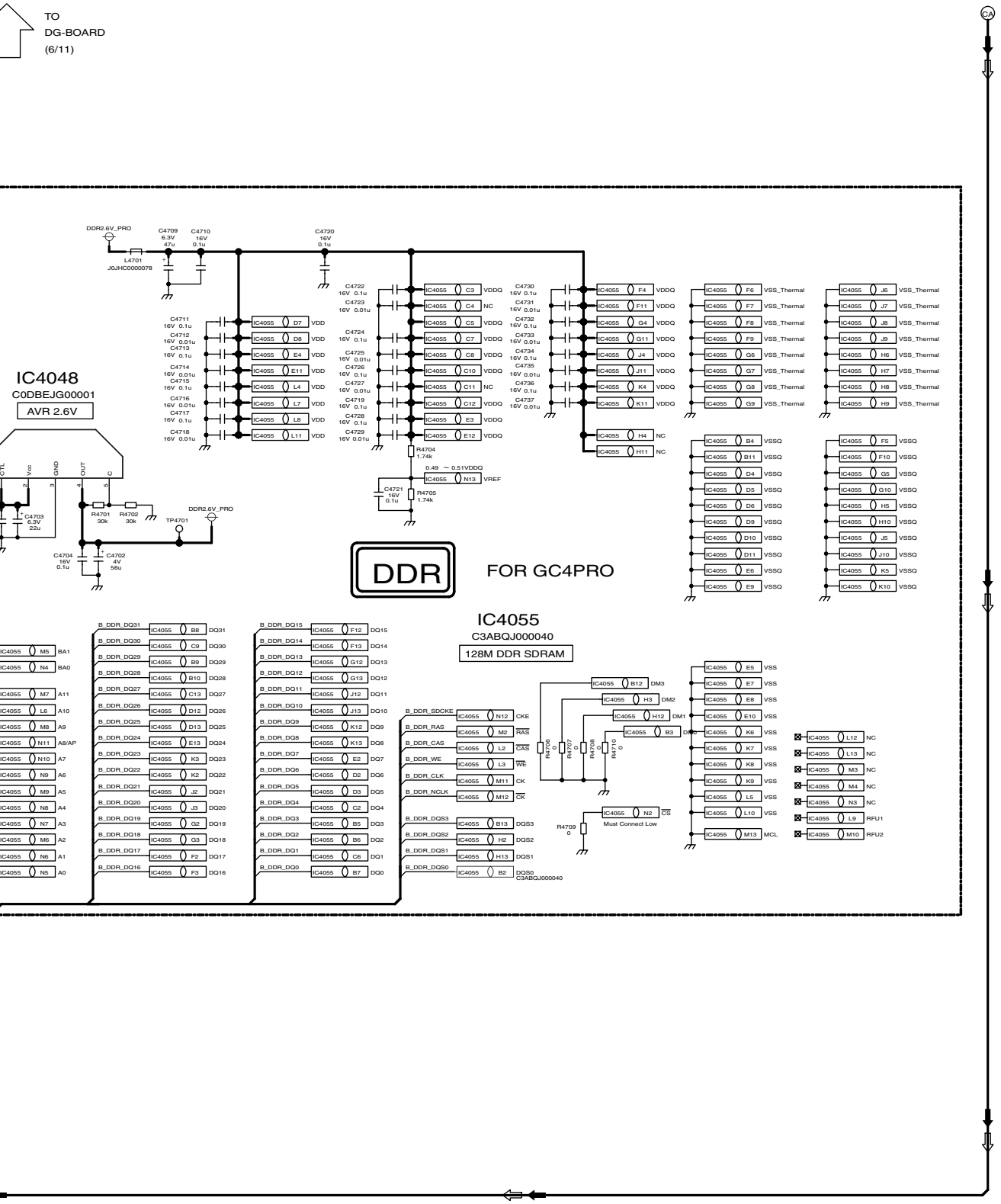


TH-37/42PA50E, TH-37/42PE50B
DG-Board (10 of 11) Schematic Diagram

14.37. DG-Board (11 of 11) Schematic Diagram

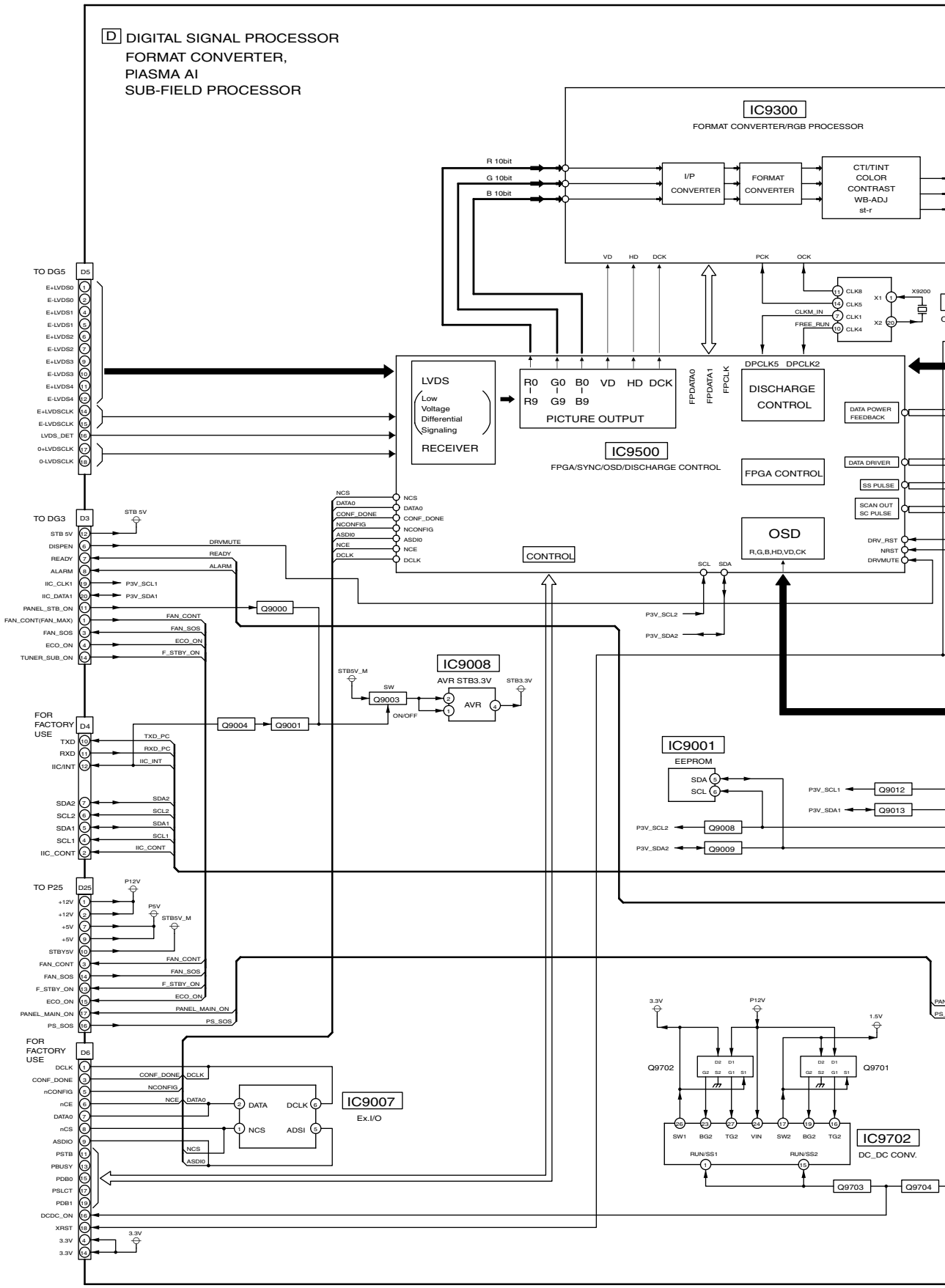


TO
DG-BOARD
(6/11)

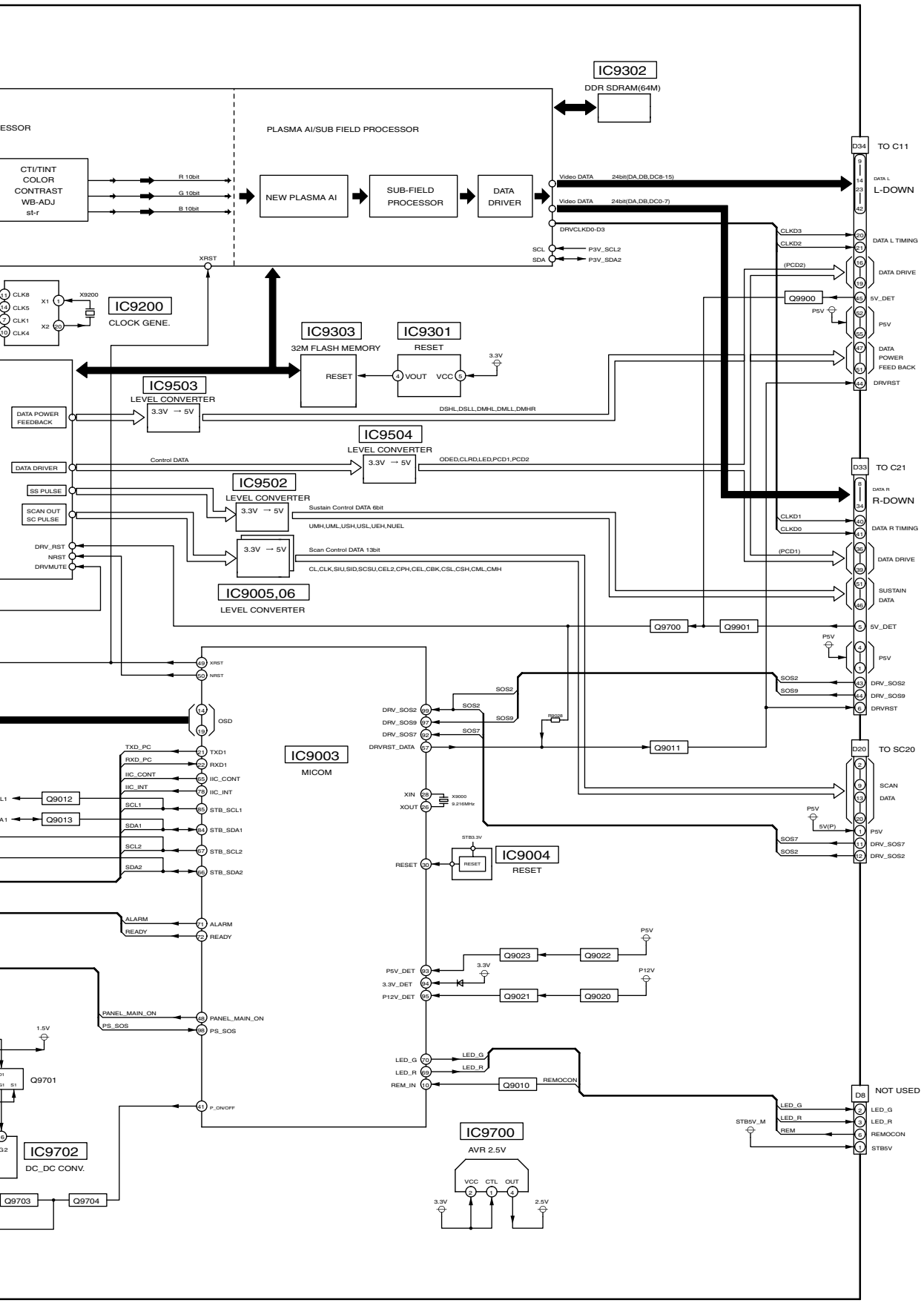


TH-37/42PA50E, TH-37/42PE50B
DG-Board (11 of 11) Schematic Diagram

14.38. D-Board Block Diagram

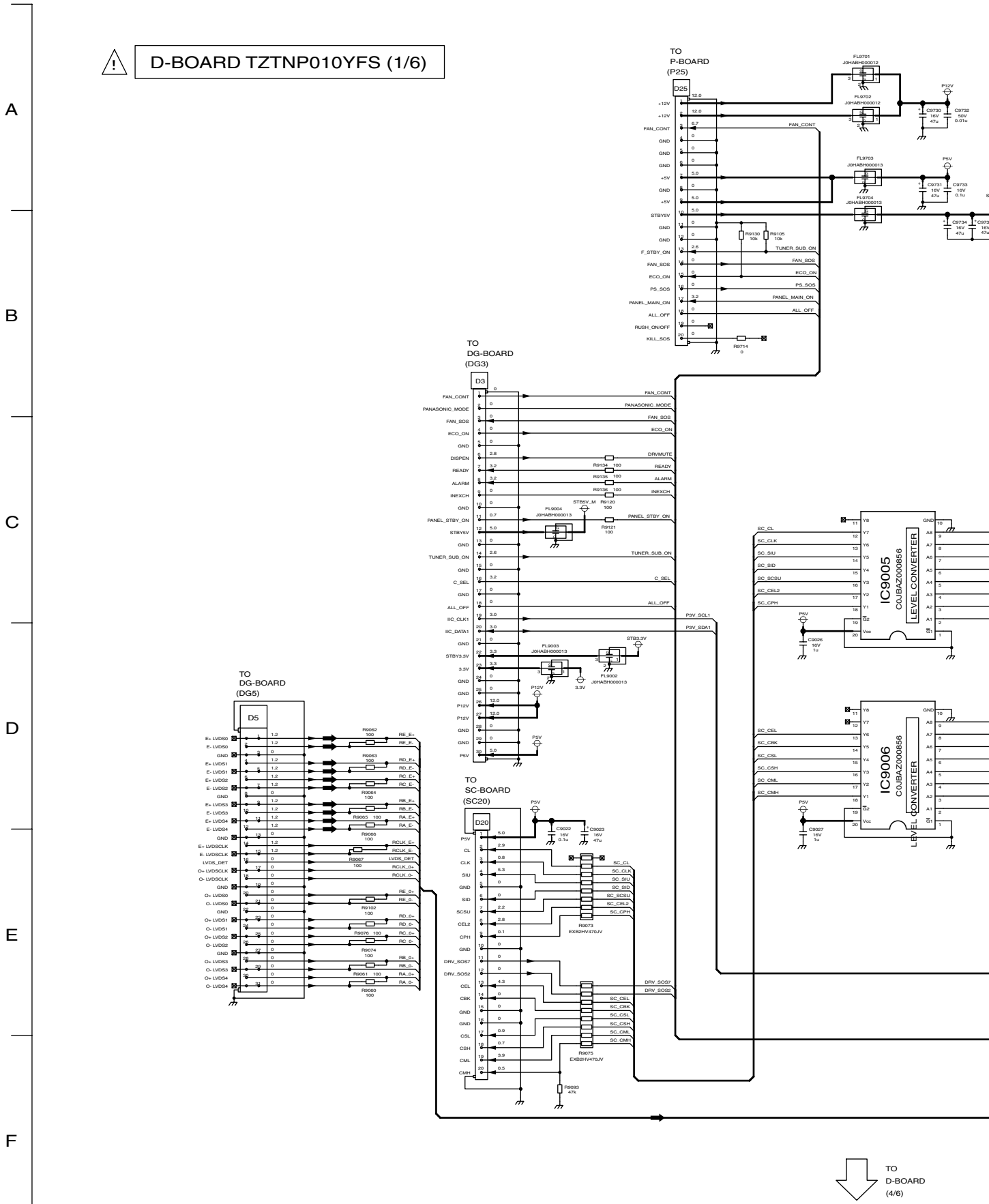


TH-37/42PA50E, TH-37/42PE50B
D-Board Block Diagram

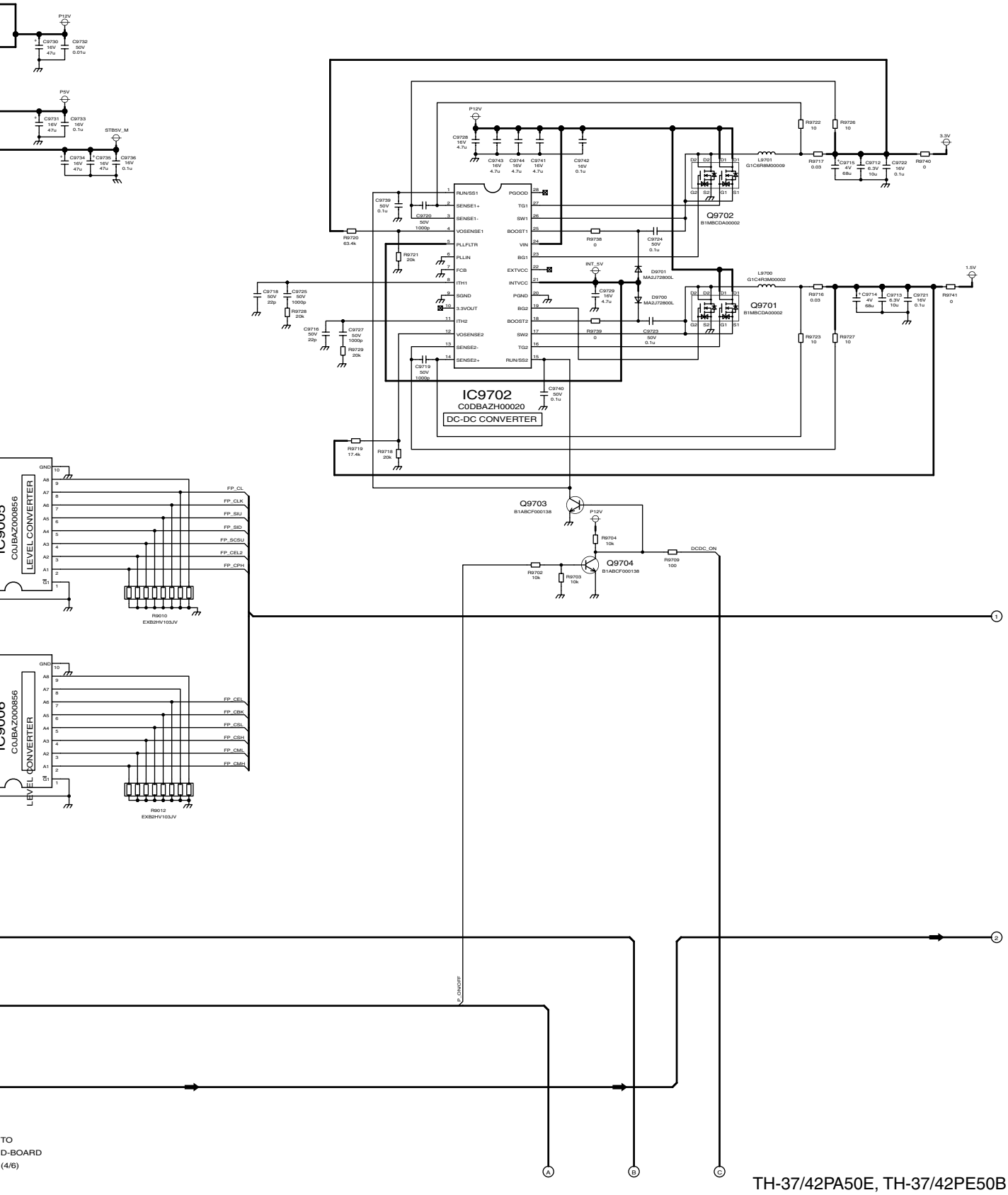


TH-37/42PA50E, TH-37/42PE50B
D-Board Block Diagram

14.39. D-Board (1 of 6) Schematic Diagram



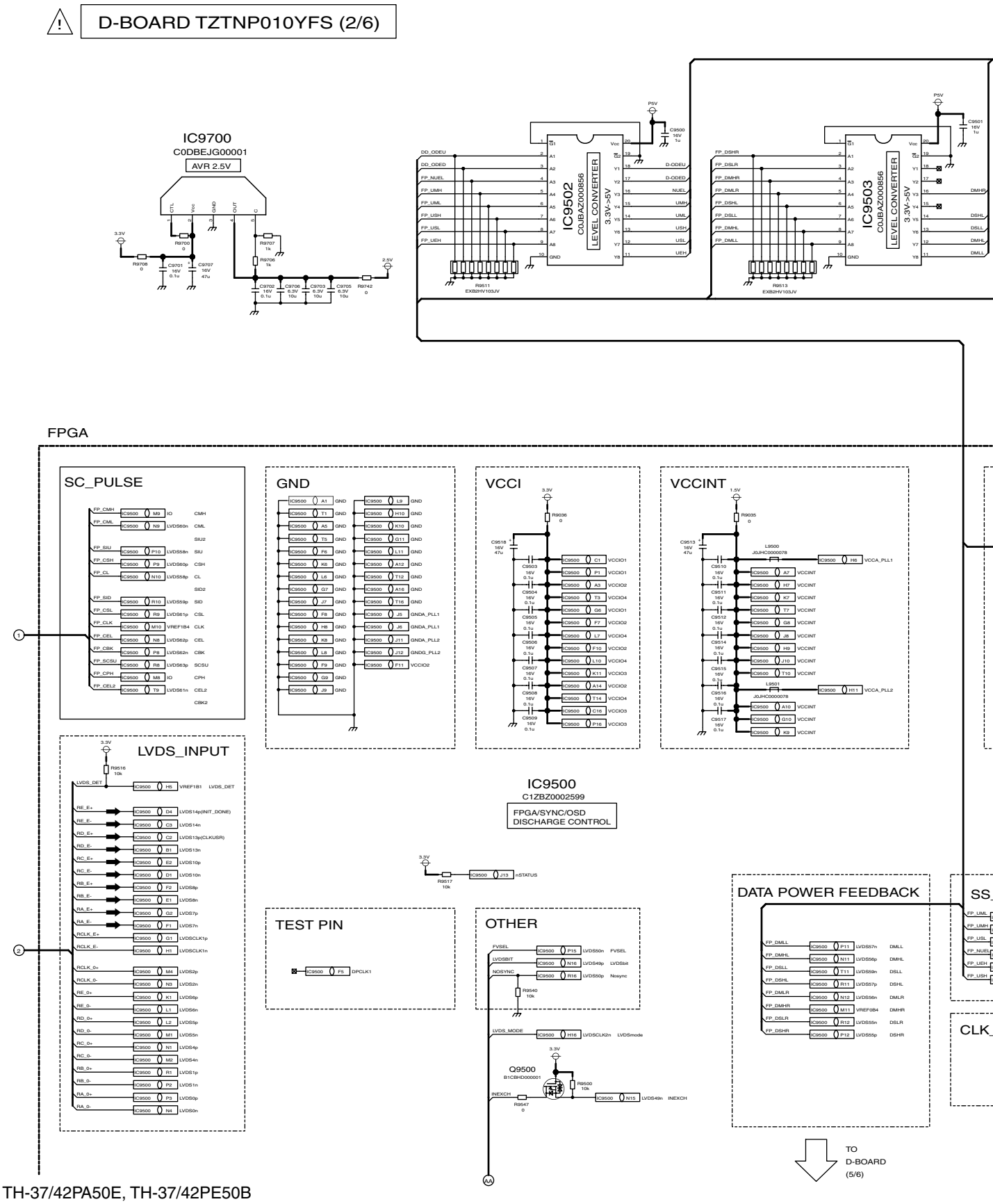
TH-37/42PA50E, TH-37/42PE50B
D-Board (1 of 6) Schematic Diagram



TH-37/42PA50E, TH-37/42PE50B
D-Board (1 of 6) Schematic Diagram

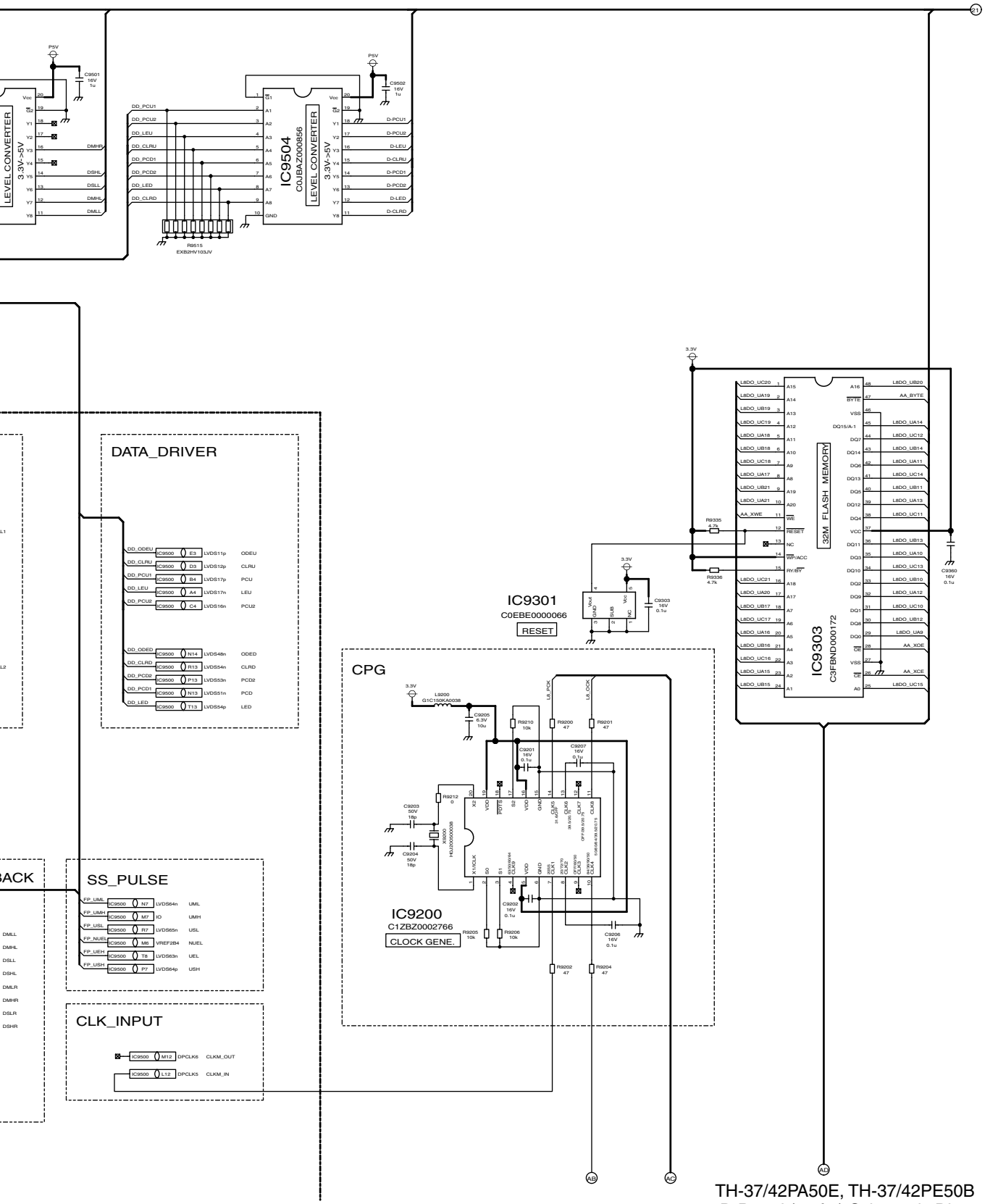
5 6 7 8 9

14.40. D-Board (2 of 6) Schematic Diagram



TH-37/42PA50E, TH-37/42PE50B
D-Board (2 of 6) Schematic Diagram

10 | 11 | 12 | 13 | 14

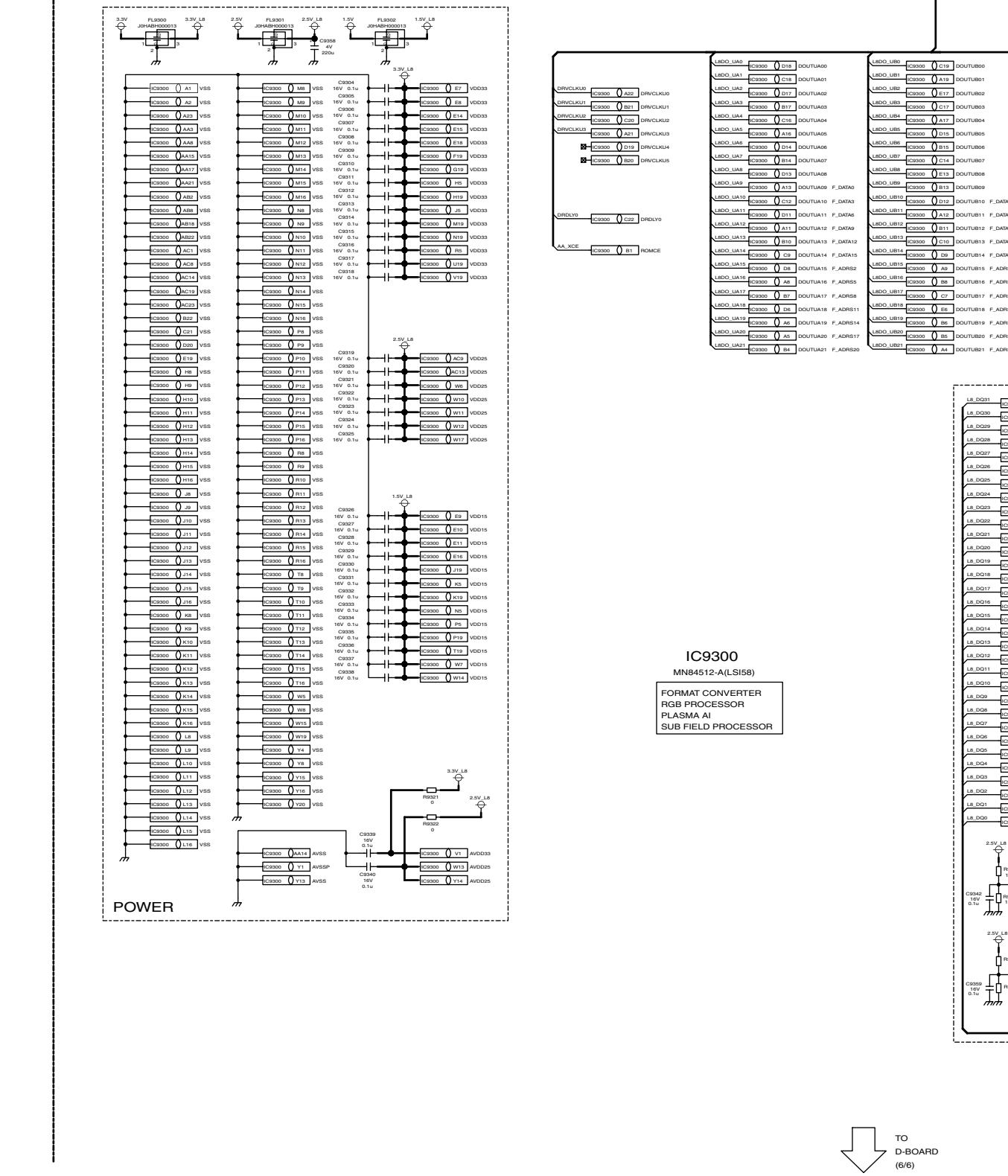


TH-37/42PA50E, TH-37/42PE50B
D-Board (2 of 6) Schematic Diagram

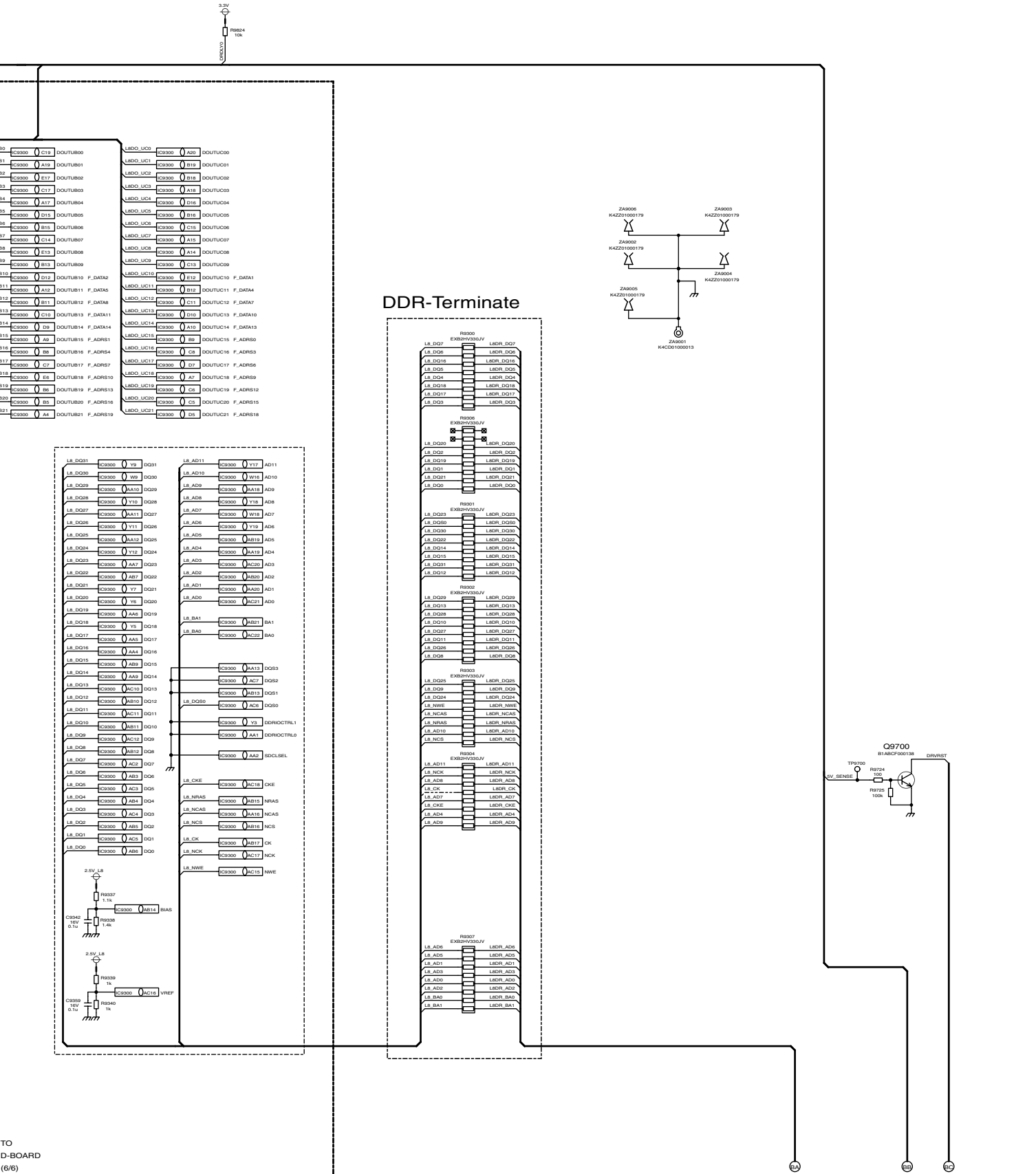
14 15 16 17 18

14.41. D-Board (3 of 6) Schematic Diagram

D-BOARD TZTNP010YFS (3/6)



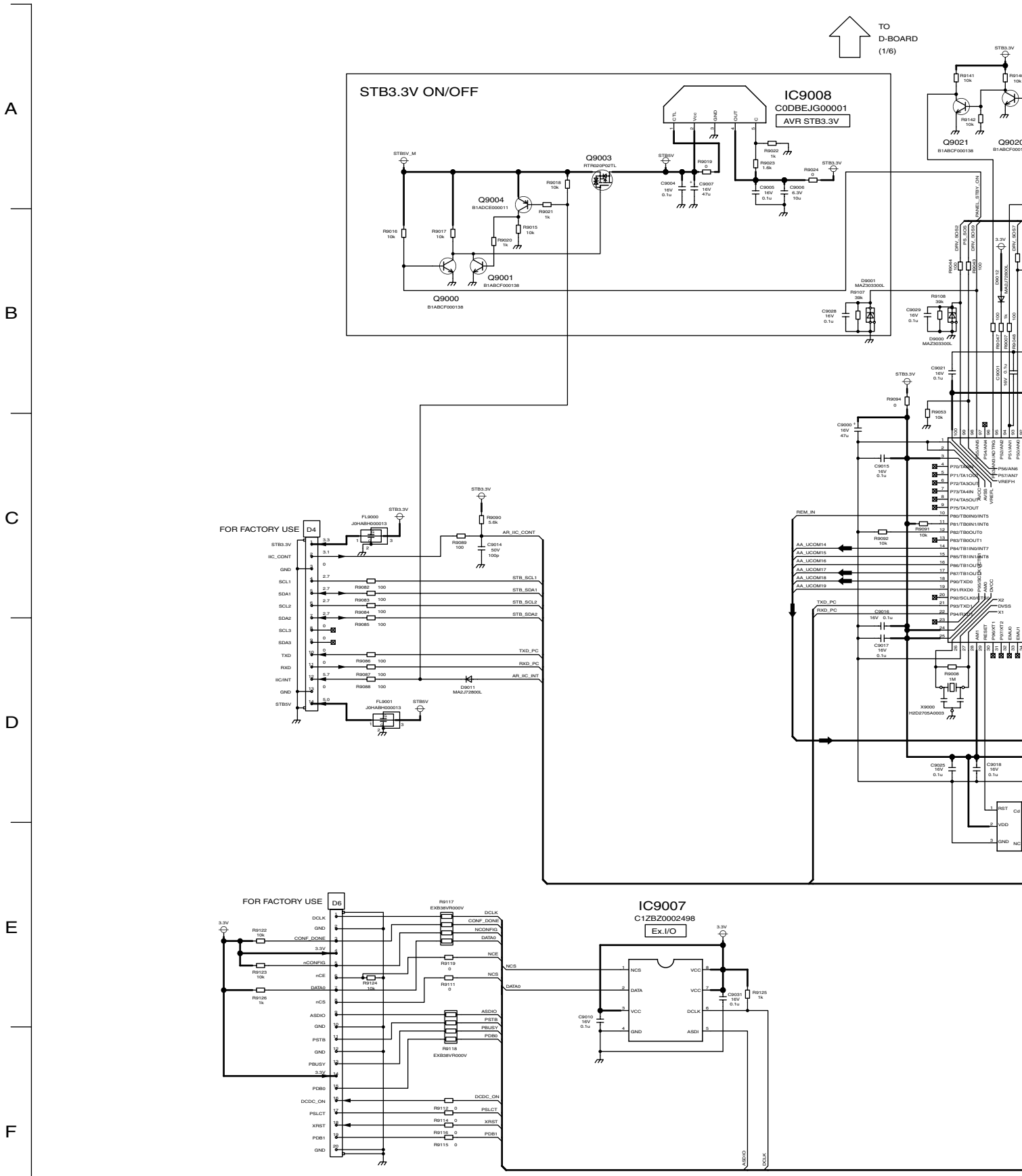
TH-37/42PA50E, TH-37/42PE50B
D-Board (3 of 6) Schematic Diagram



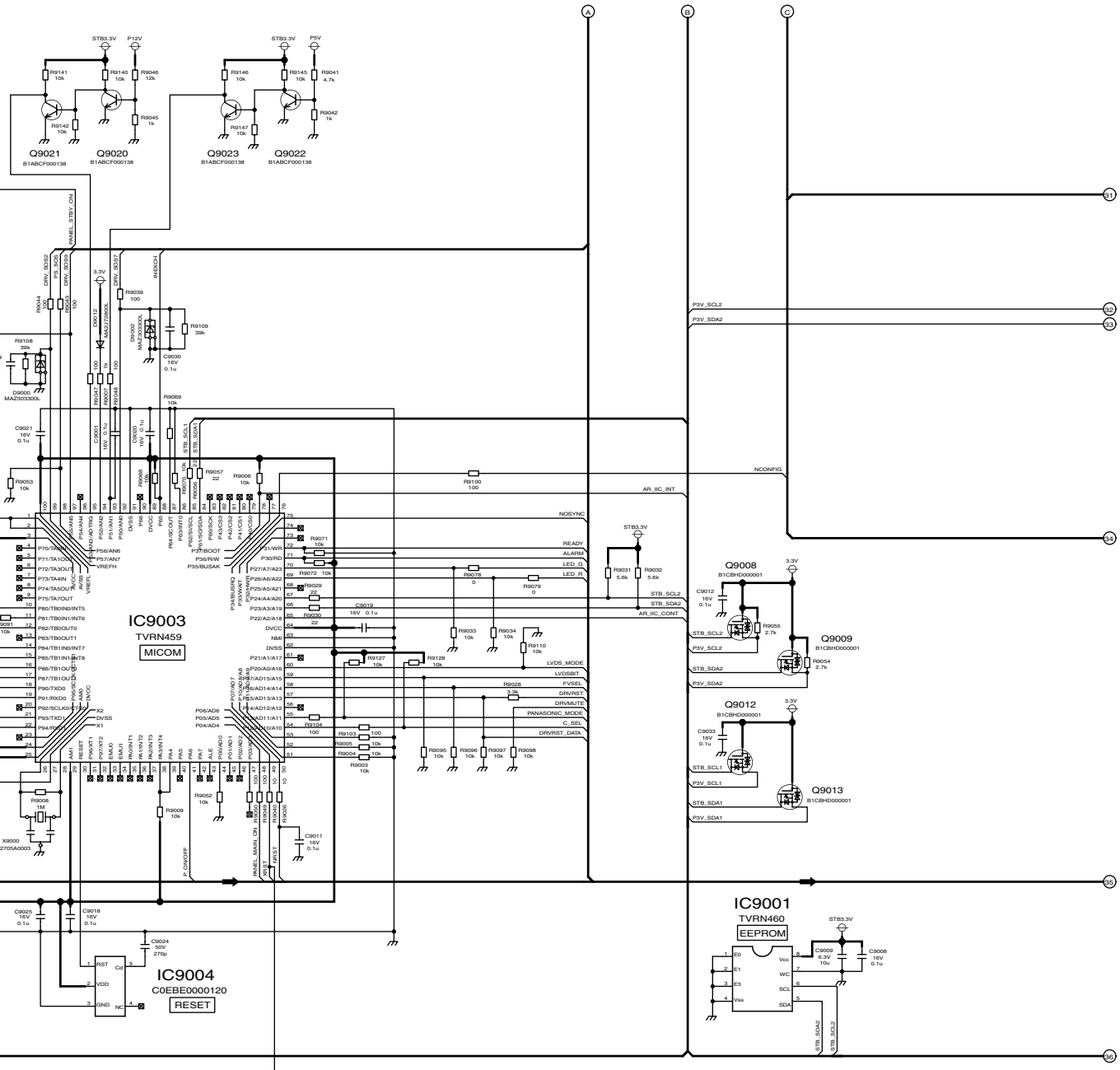
TH-37/42PA50E, TH-37/42PE50B
D-Board (3 of 6) Schematic Diagram

23 24 25 26 27

14.42. D-Board (4 of 6) Schematic Diagram



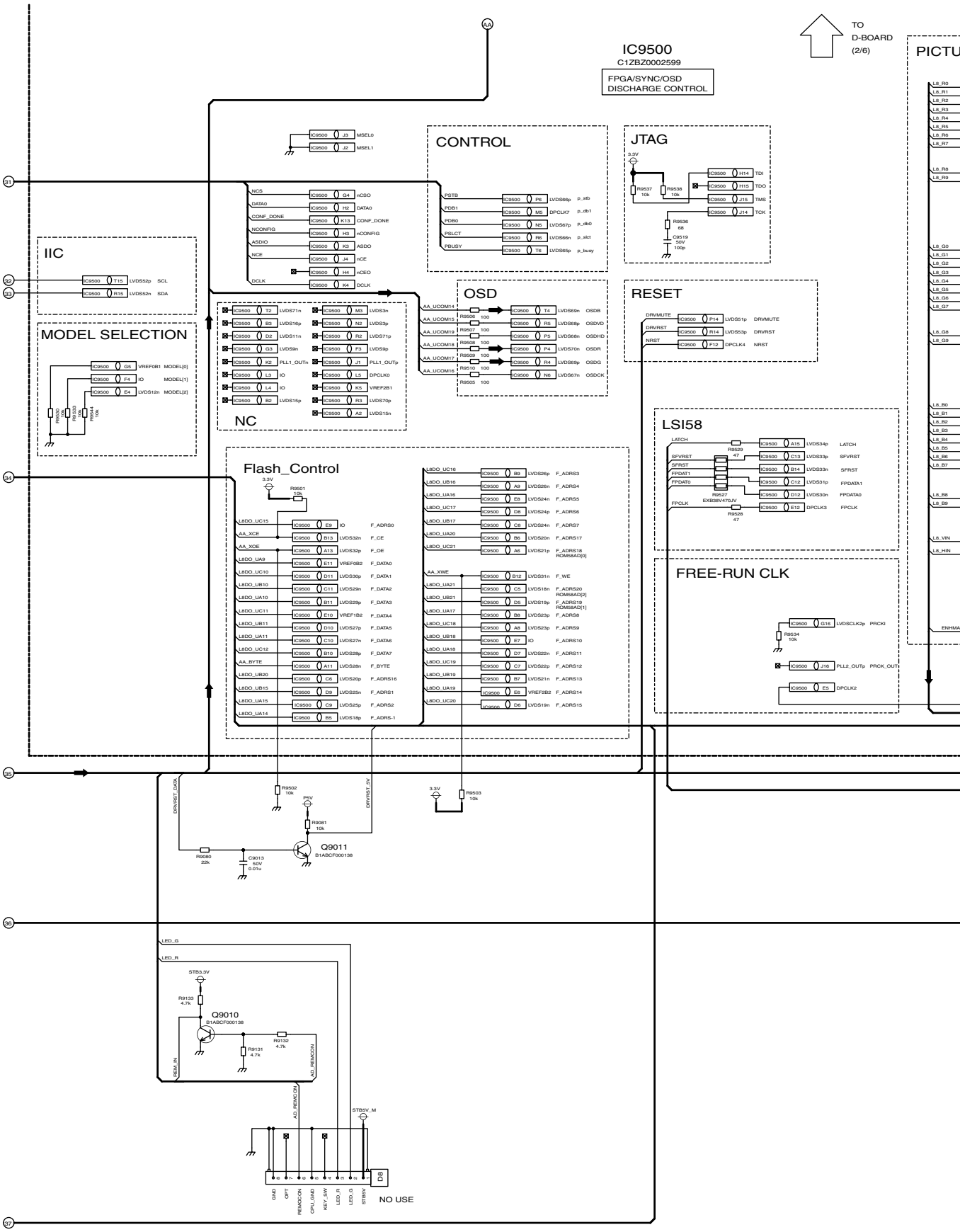
TH-37/42PA50E, TH-37/42PE50B
D-Board (4 of 6) Schematic Diagram



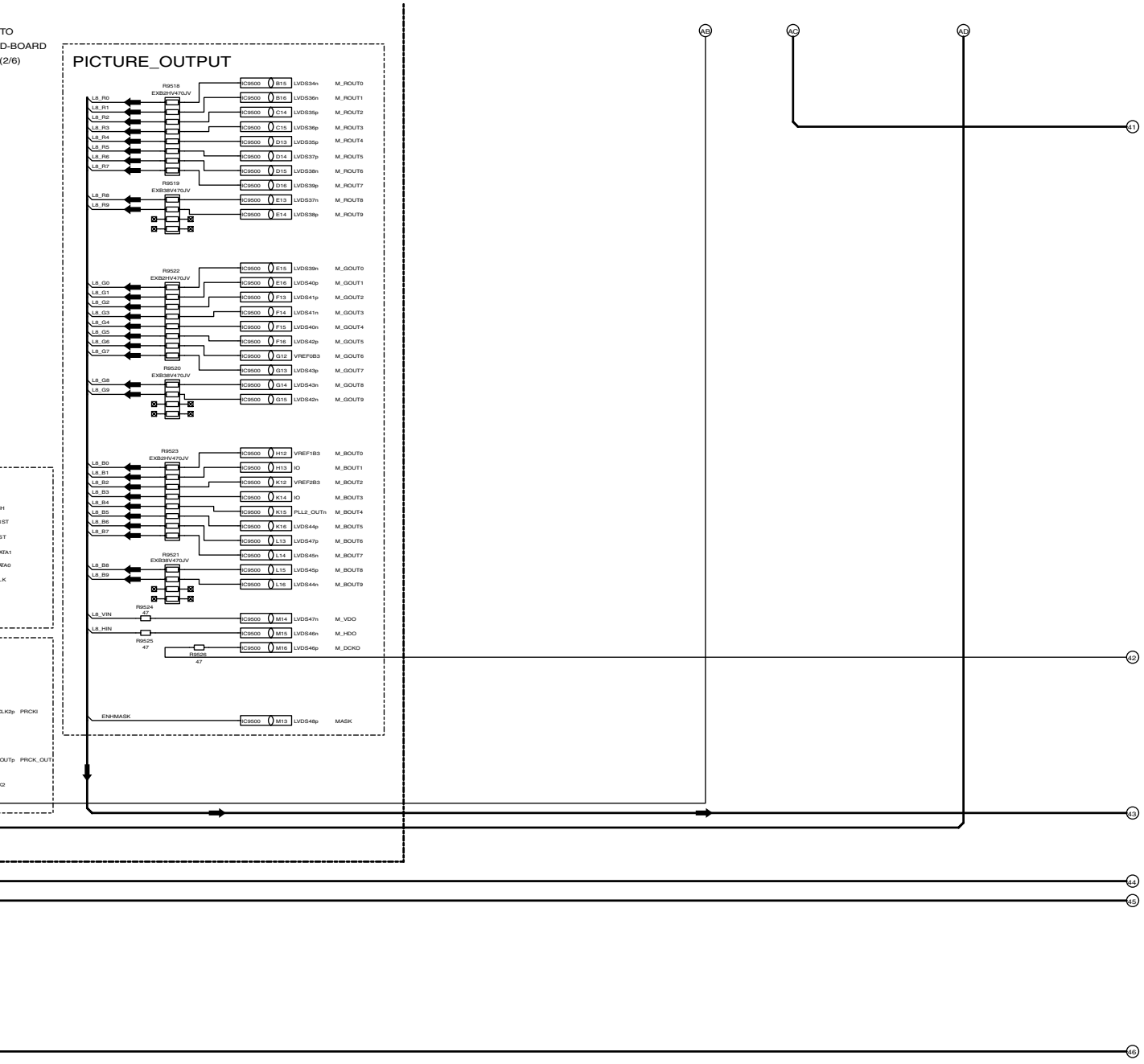
D-BOARD TZTNP010YFS (4/6)

TH-37/42PA50E, TH-37/42PE50B
D-Board (4 of 6) Schematic Diagram

14.43. D-Board (5 of 6) Schematic Diagram



TH-37/42PA50E, TH-37/42PE50B
D-Board (5 of 6) Schematic Diagram

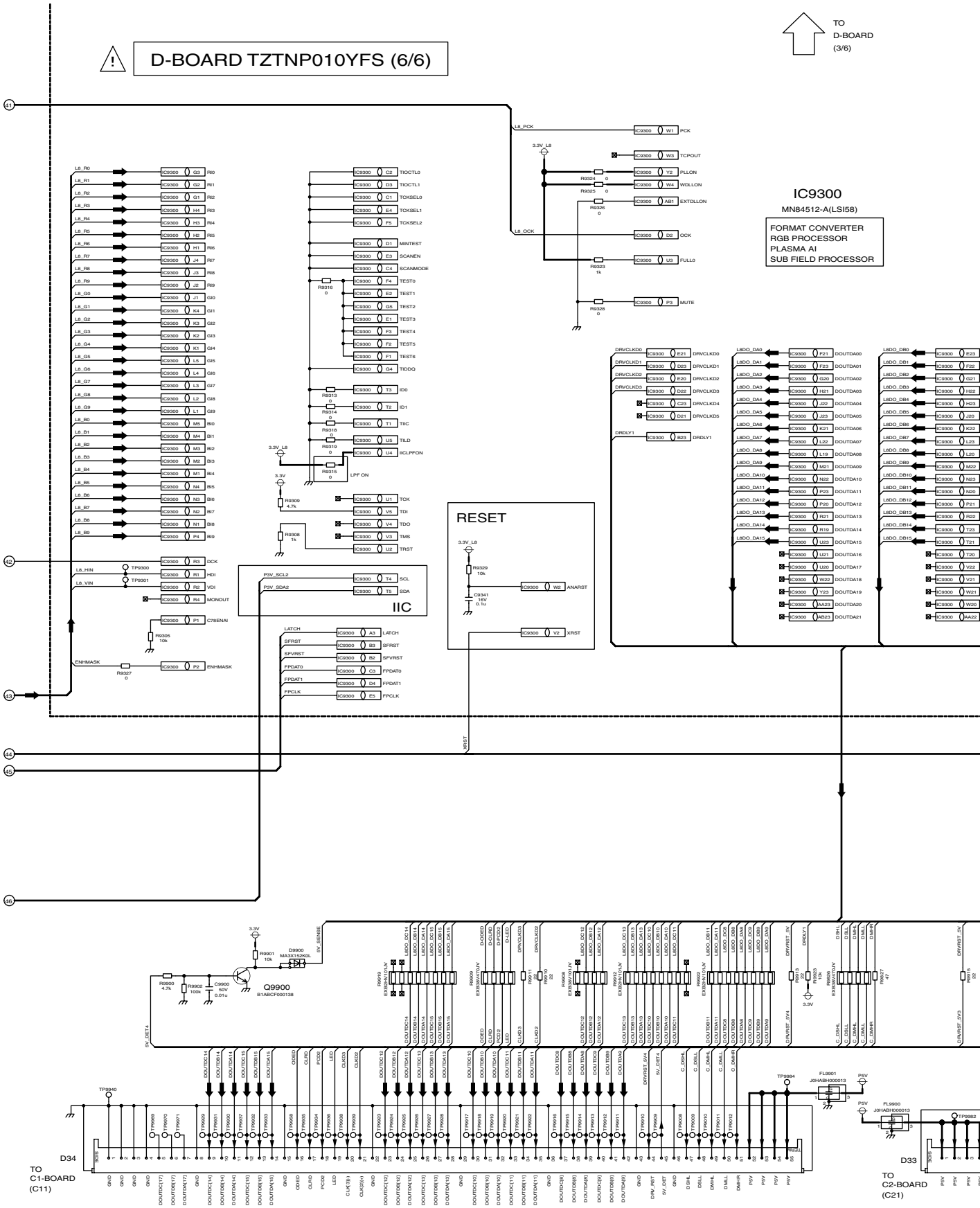


D-BOARD TZTNP010YFS (5/6)

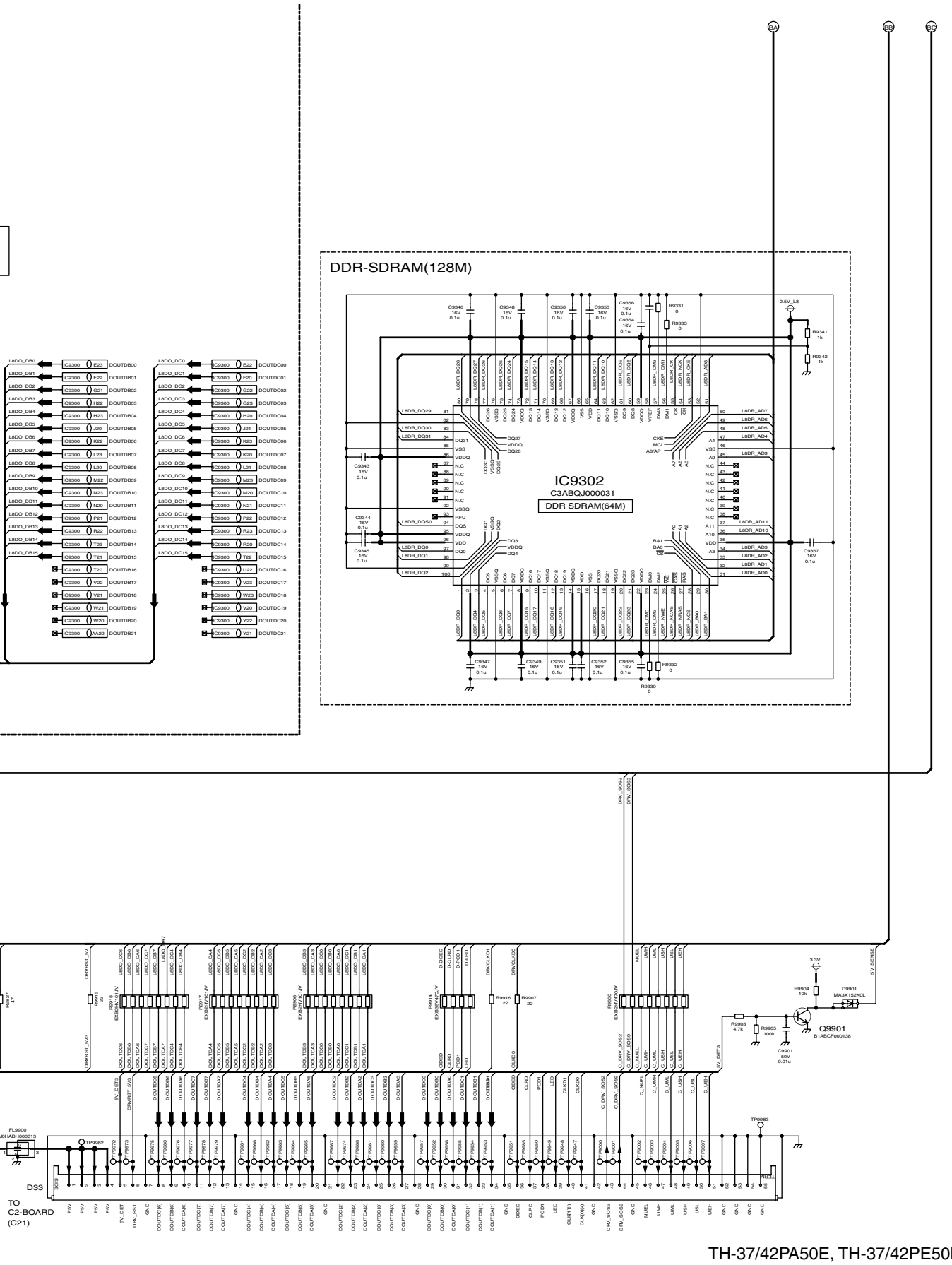
TH-37/42PA50E, TH-37/42PE50B
D-Board (5 of 6) Schematic Diagram

14 | 15 | 16 | 17 | 18

14.44. D-Board (6 of 6) Schematic Diagram

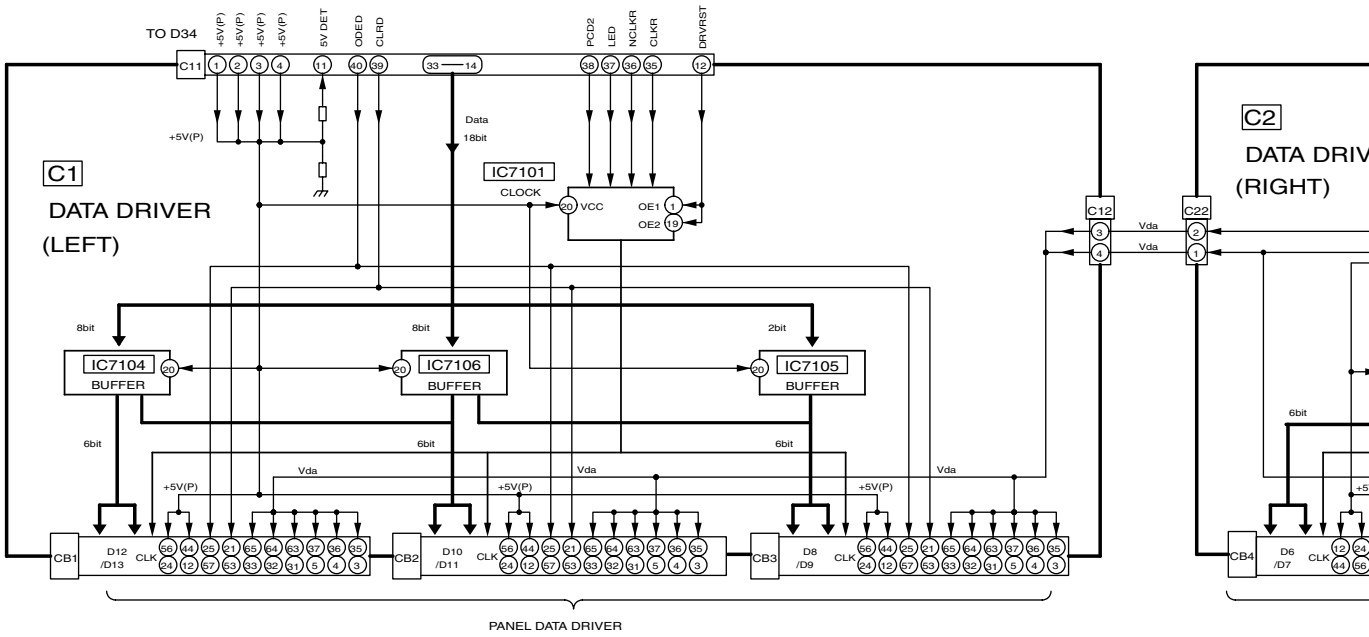


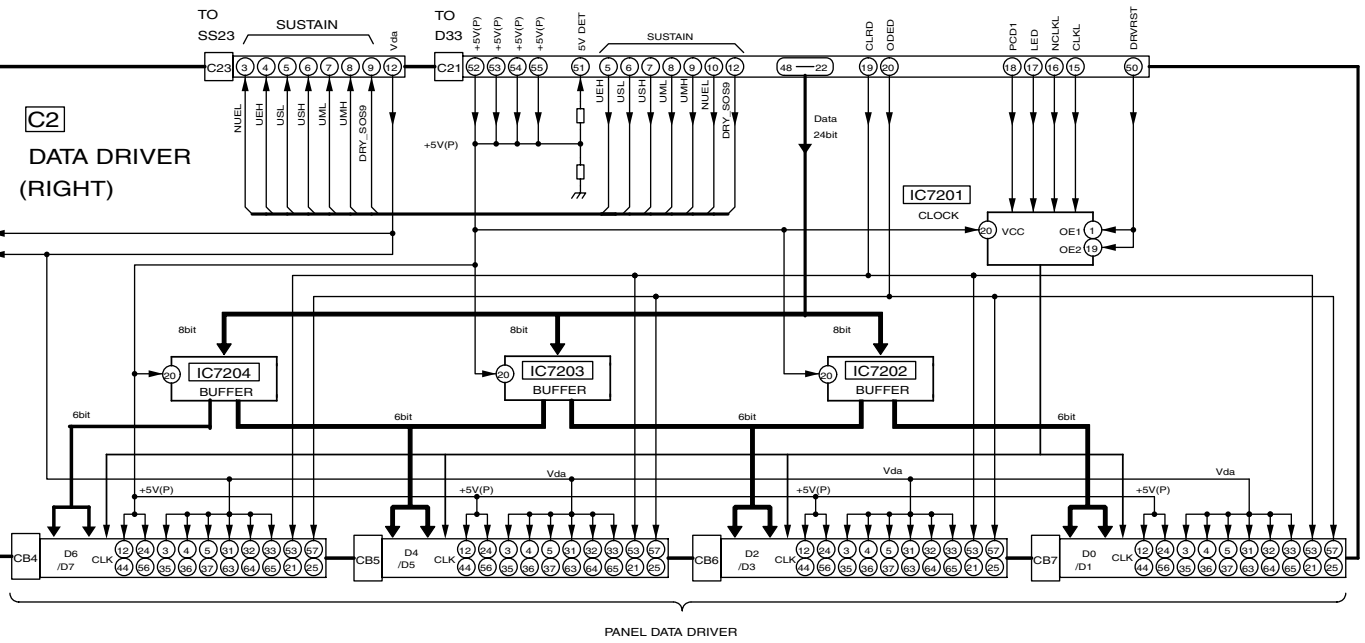
TH-37/42PA50E, TH-37/42PE50B
D-Board (6 of 6) Schematic Diagram



TH-37/42PA50E, TH-37/42PE50B
D-Board (6 of 6) Schematic Diagram

14.45. C1 and C2-Board Block Diagram

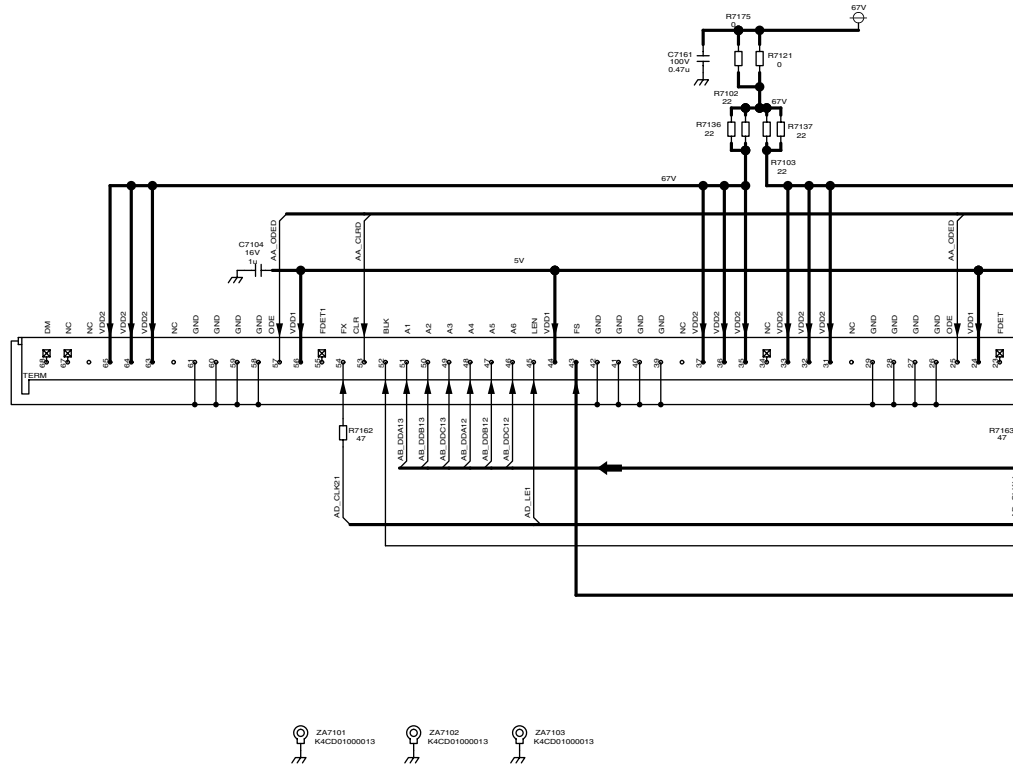




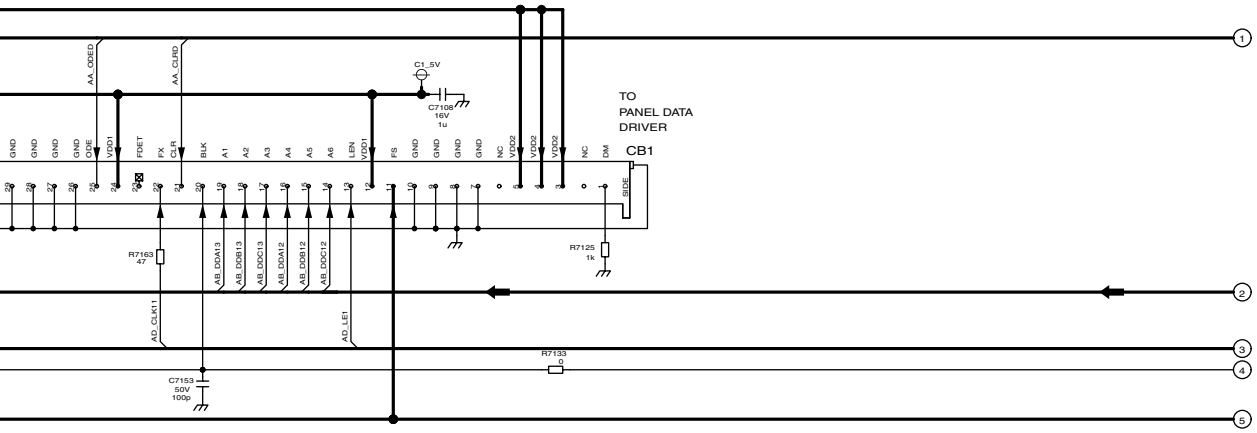
TH-37/42PA50E, TH-37/42PE50B
C1 and C2-Board Block Diagram

14.46. C1-Board (1 of 2) Schematic Diagram (37 inch)

C1-BOARD TNPA3541 (1/2)



TH-37PA50E, TH-37PE50B
C1-Board (1 of 2) Schematic Diagram

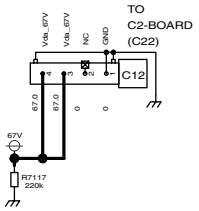


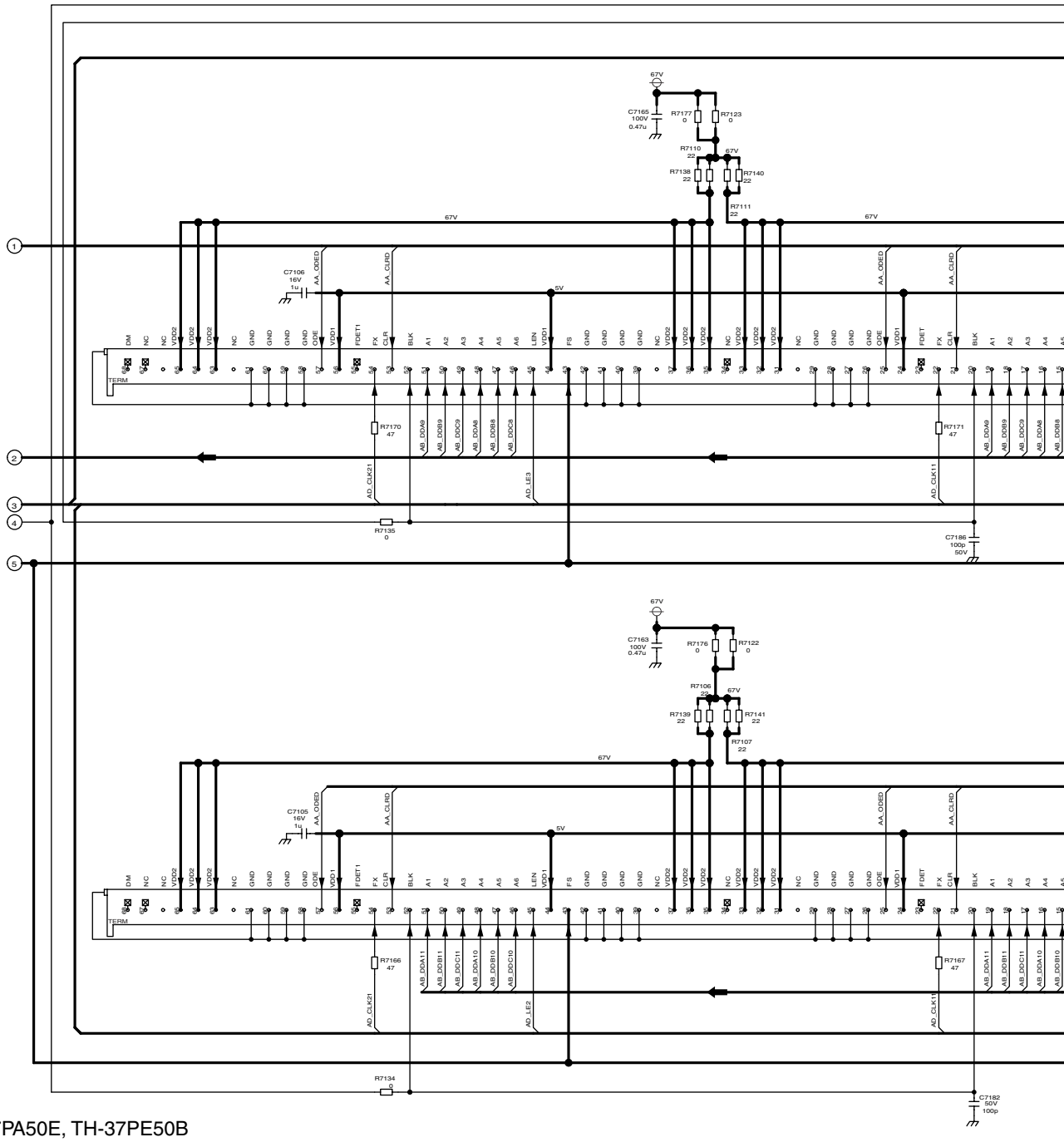
TH-37PA50E, TH-37PE50B
C1-Board (1 of 2) Schematic Diagram

5 6 7 8

14.47. C1-Board (2 of 2) Schematic Diagram (37 inch)

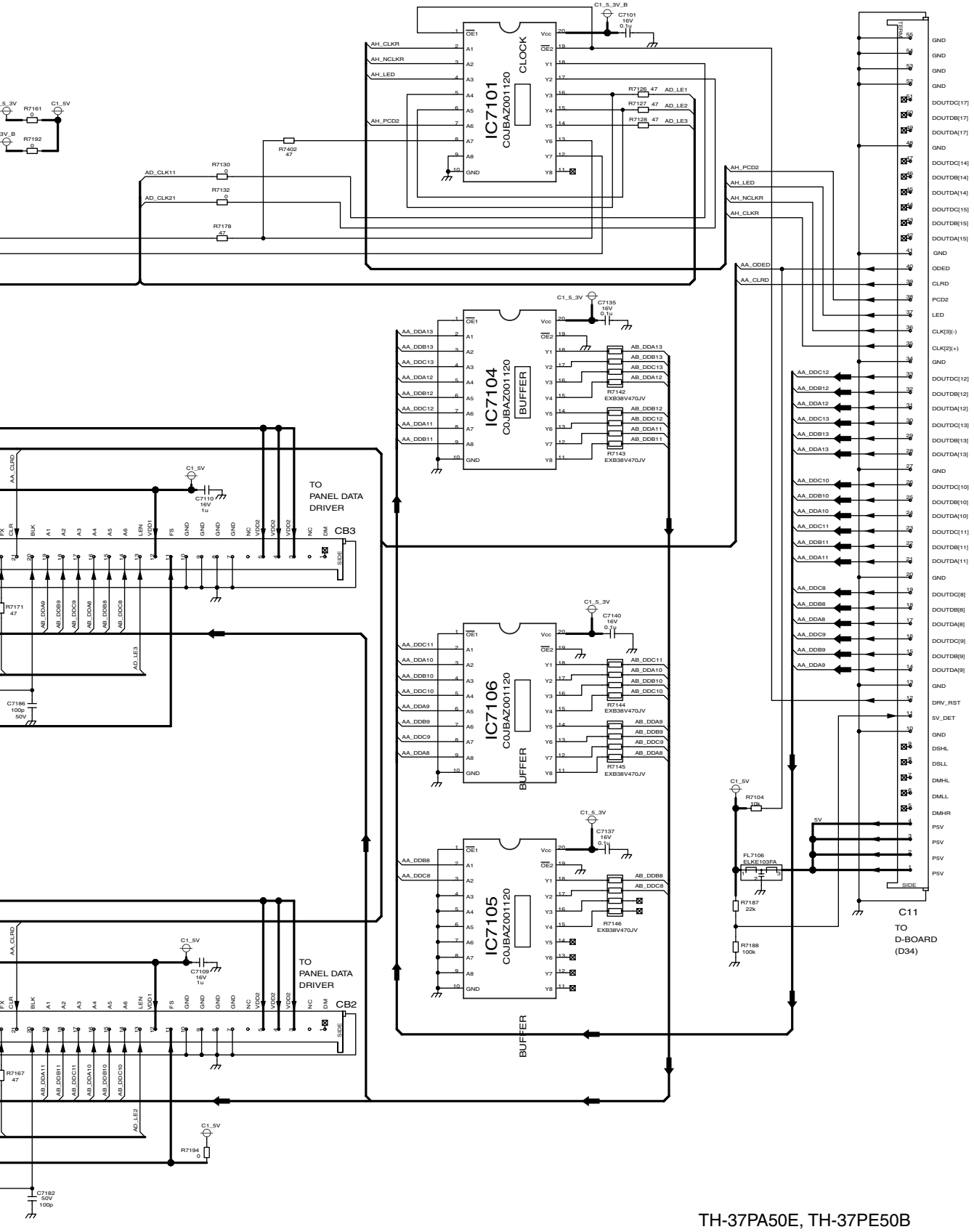
C1-BOARD TNPA3541 (2/2)





TH-37PA50E, TH-37PE50B
C1-Board (2 of 2) Schematic Diagram

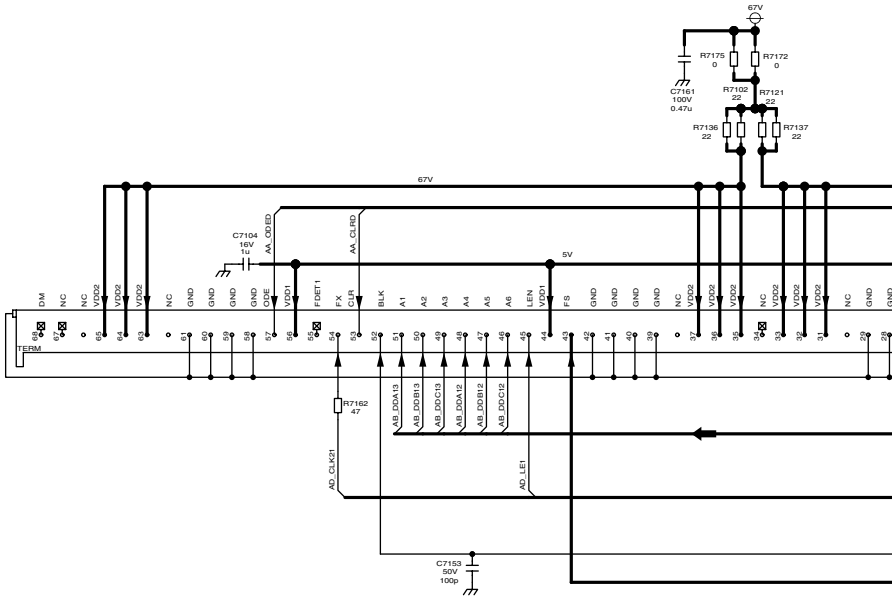
8 | 9 | 10 | 11



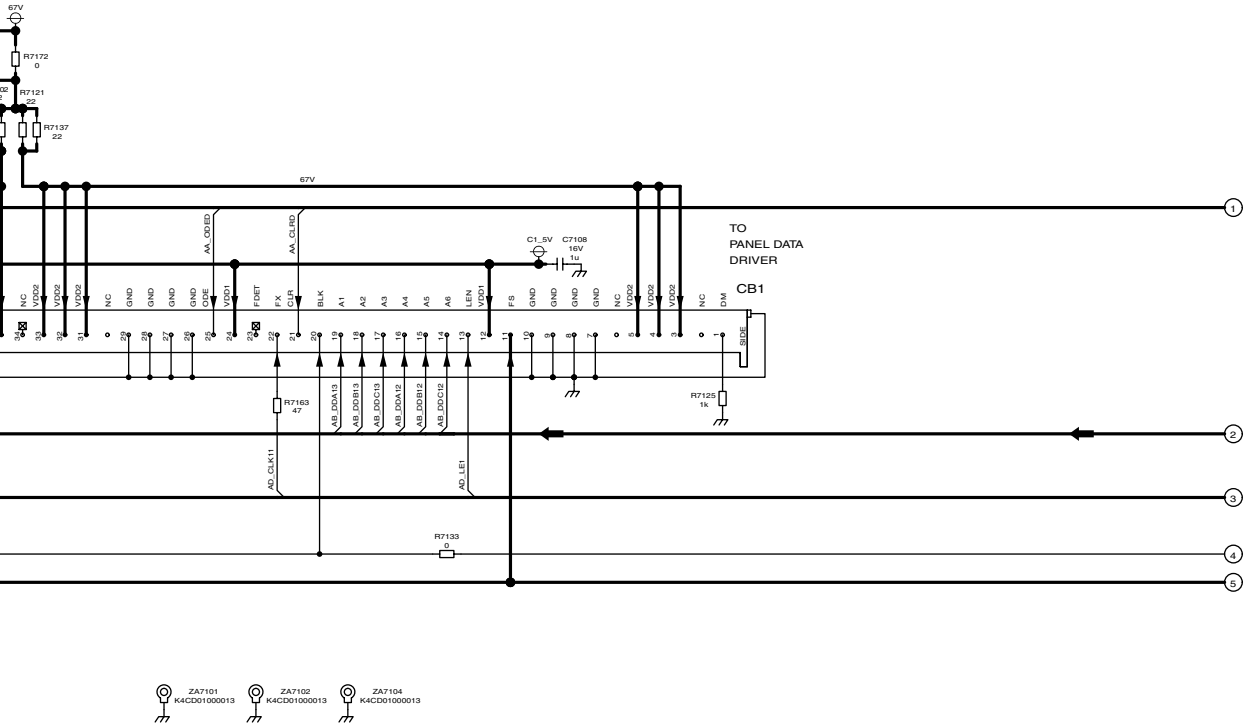
TH-37PA50E, TH-37PE50B
C1-Board (2 of 2) Schematic Diagram

14.48. C1-Board (1 of 2) Schematic Diagram (42 inch)

C1-BOARD TNPA3545 (1/2)



TH-42PA50E, TH-42PE50B
C1-Board (1 of 2) Schematic Diagram



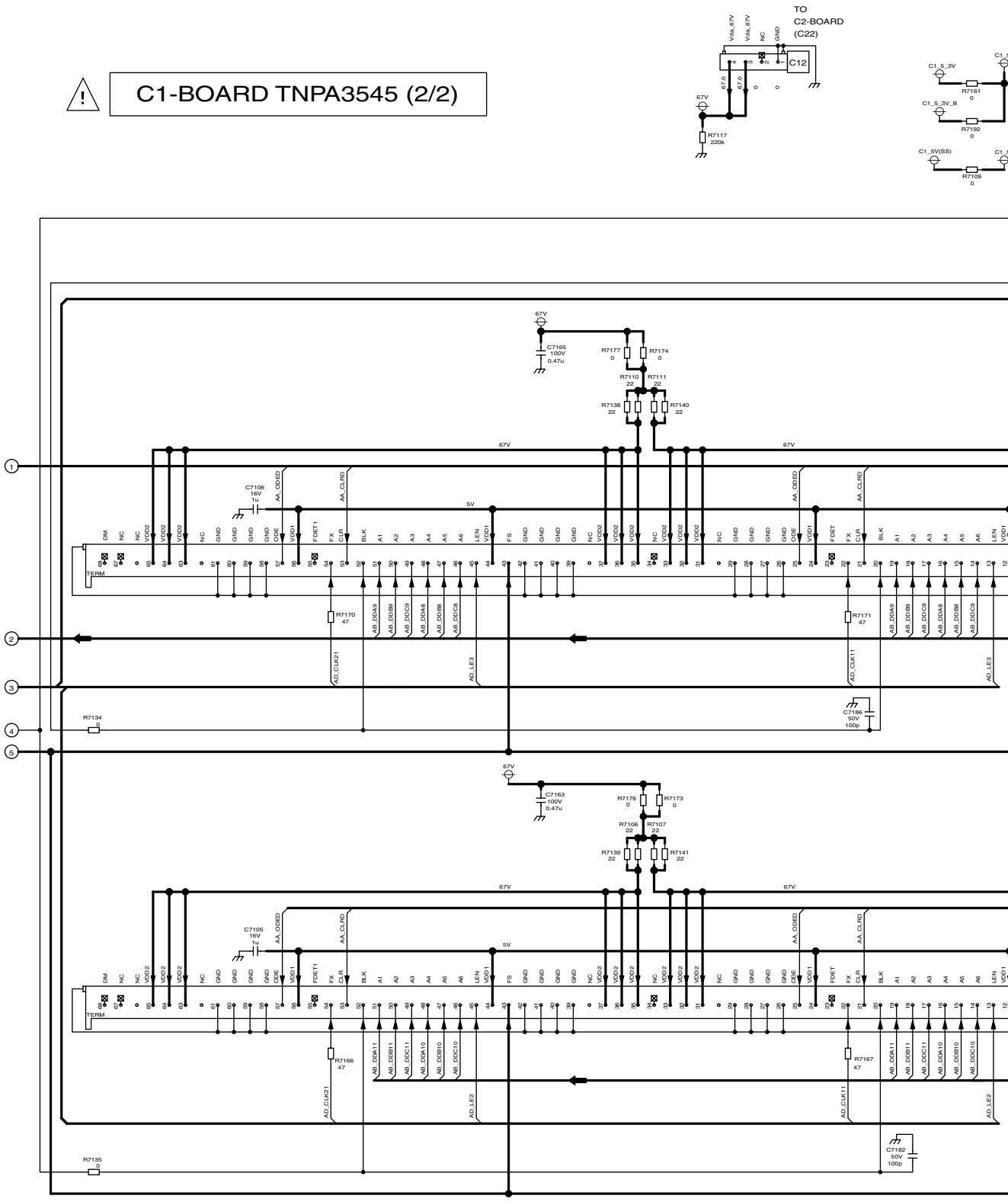
ZA7101 K4CD01000013 ZA7102 K4CD01000013 ZA7104 K4CD01000013

TH-42PA50E, TH-42PE50B
C1-Board (1 of 2) Schematic Diagram

5 6 7 8

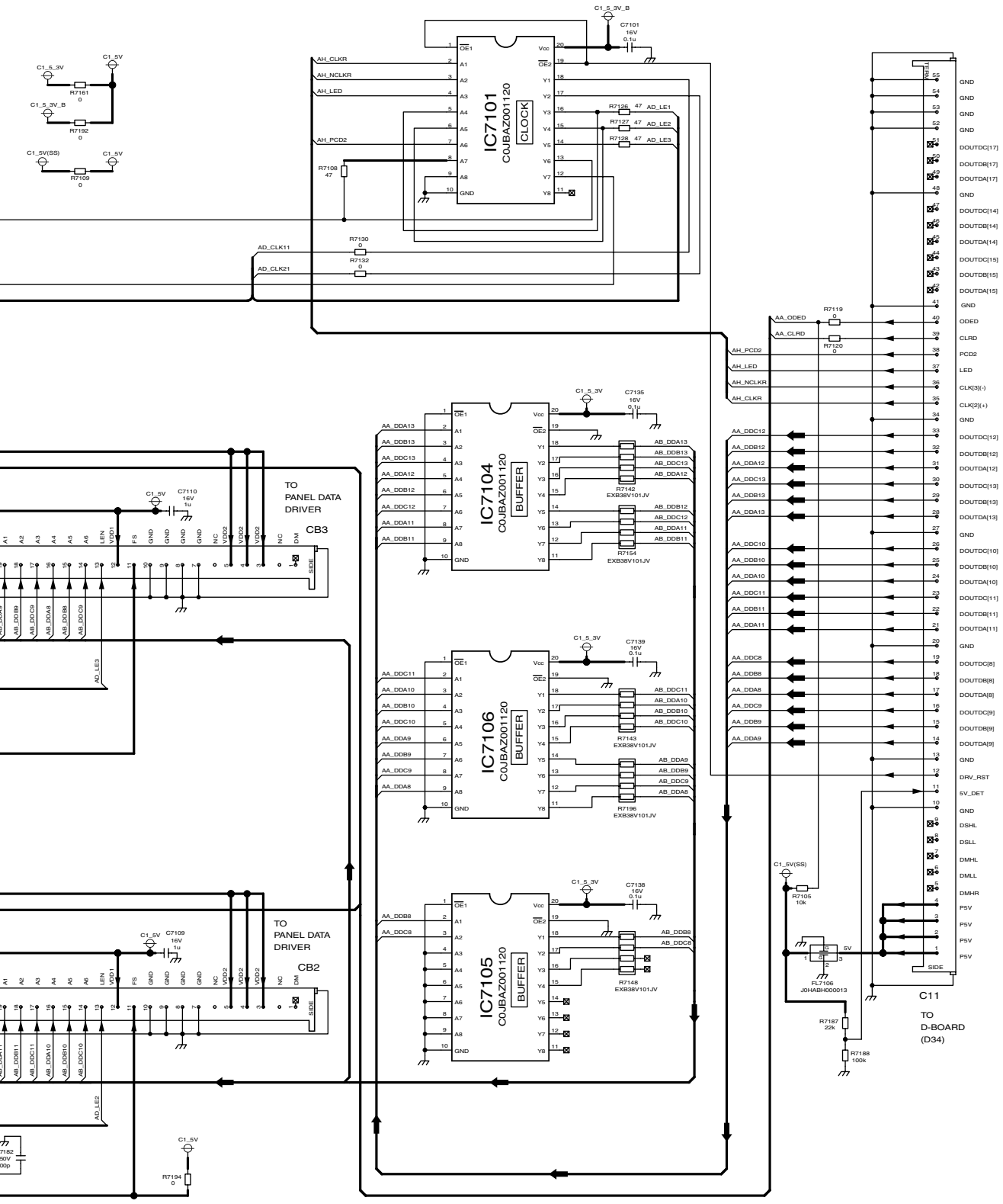
14.49. C1-Board (2 of 2) Schematic Diagram (42 inch)

C1-BOARD TNPA3545 (2/2)



TH-42PA50E, TH-42PE50B
C1-Board (2 of 2) Schematic Diagram

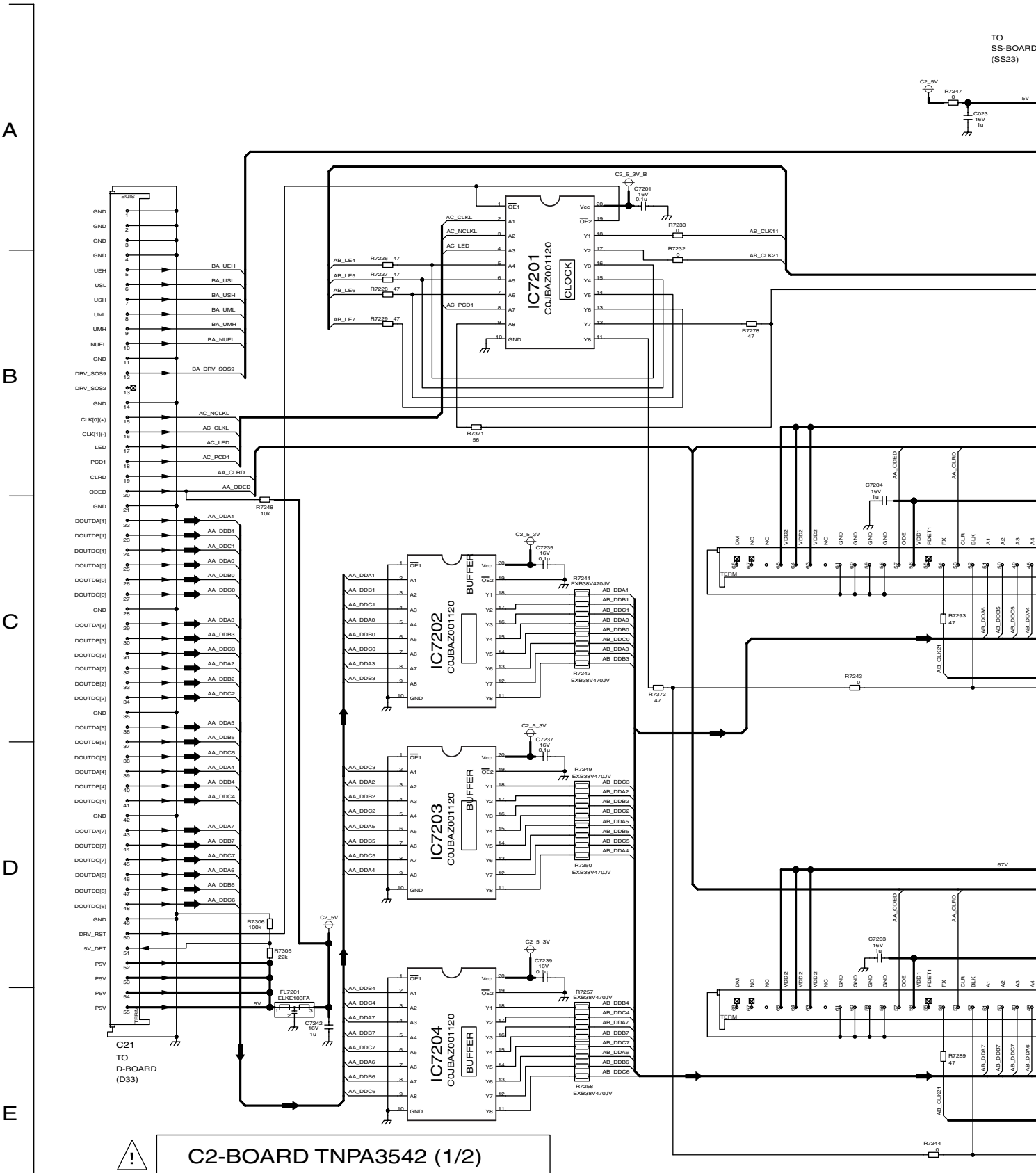
8	9	10	11	12



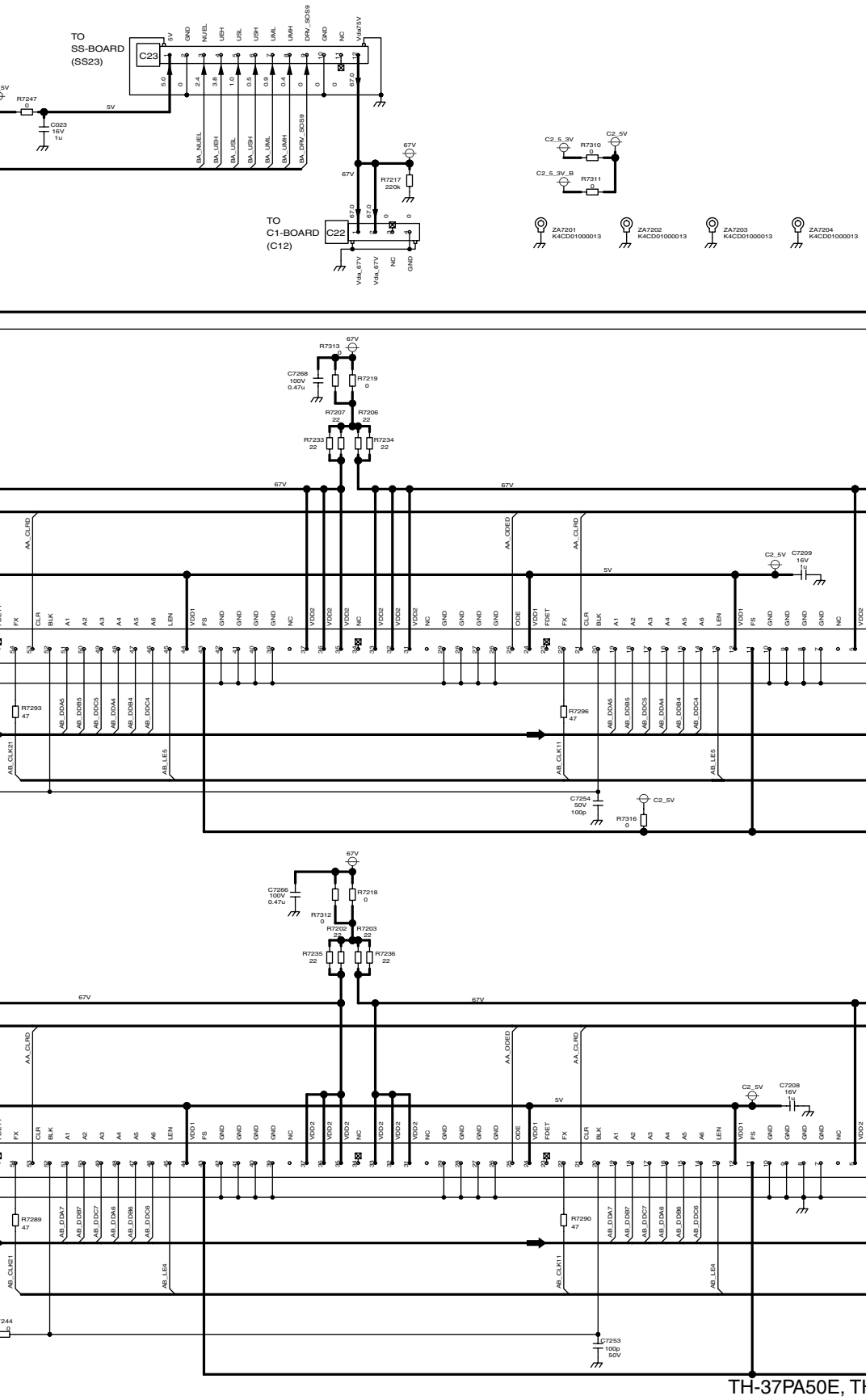
TH-42PA50E, TH-42PE50B
C1-Board (2 of 2) Schematic Diagram

12	13	14	15

14.50. C2-Board (1 of 2) Schematic Diagram (37 inch)



TH-37PA50E, TH-37PE50B
C2-Board (1 of 2) Schematic Diagram



TH-37PA50E, TH-37PE50B
C2-Board (1 of 2) Schematic Diagram

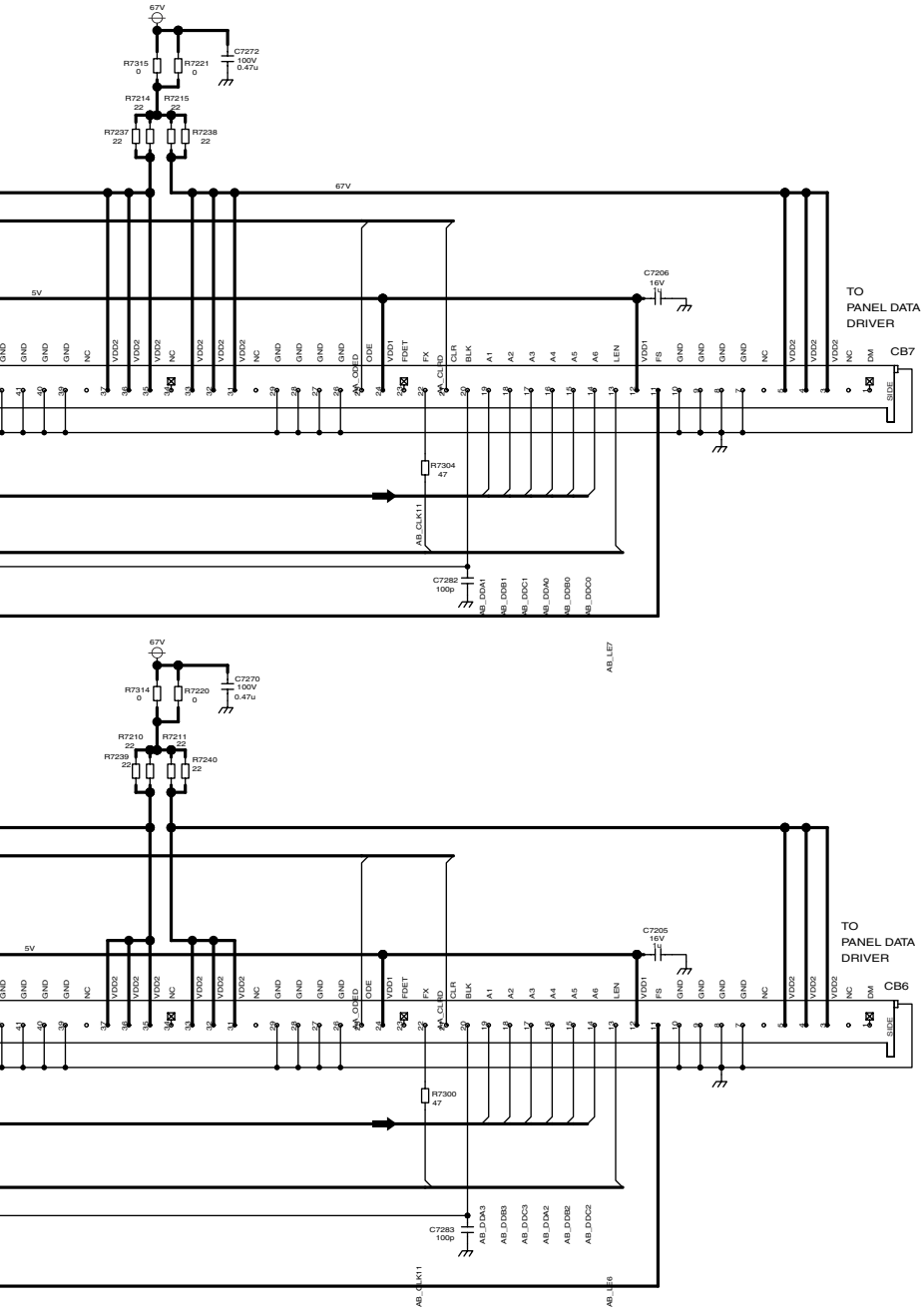
14.51. C2-Board (2 of 2) Schematic Diagram (37 inch)

C2-BOARD TNPA3542 (2/2)



TH-37PA50E, TH-37PE50B C2-Board (2 of 2) Schematic Diagram

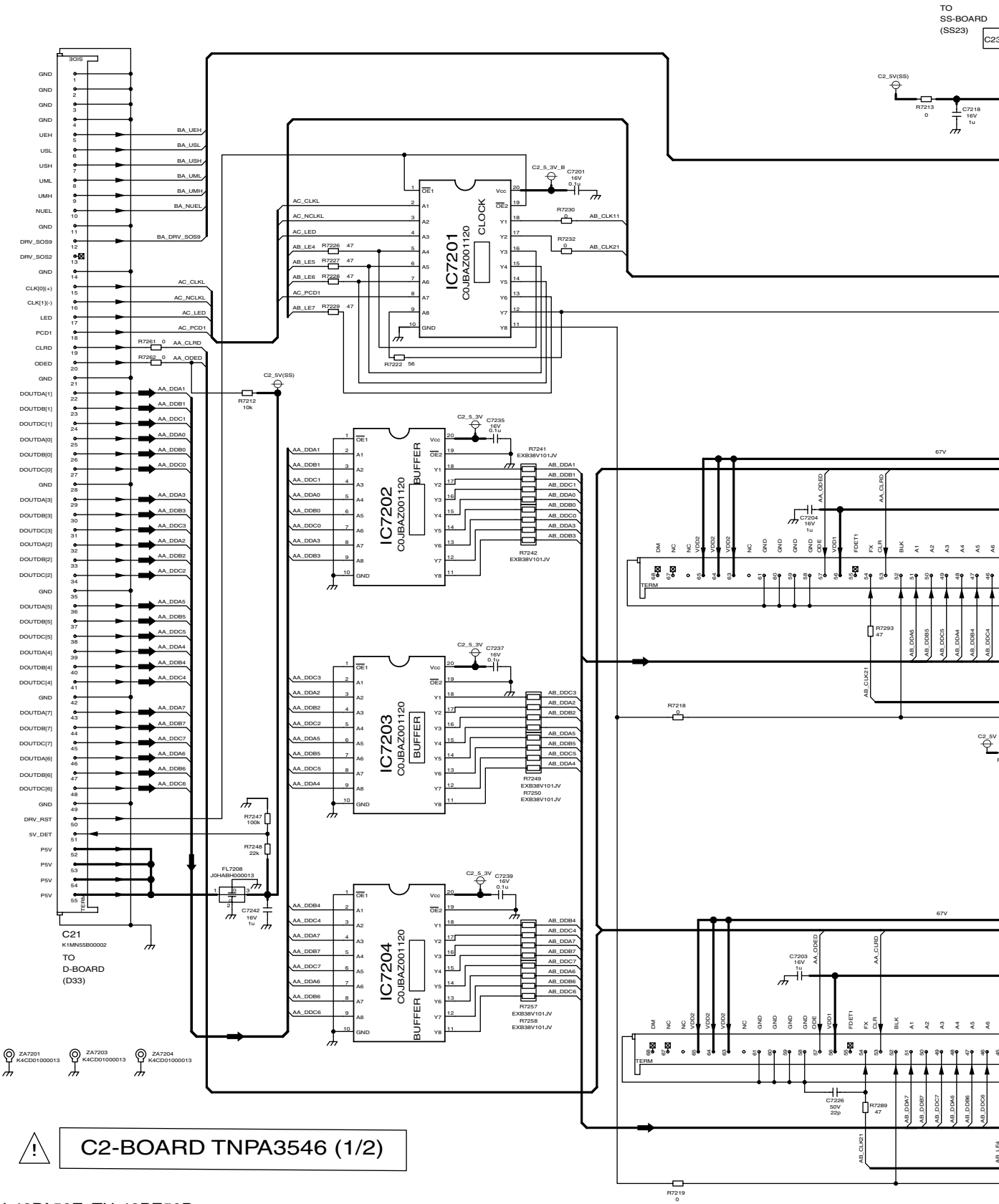
8 | 9 | 10 | 11



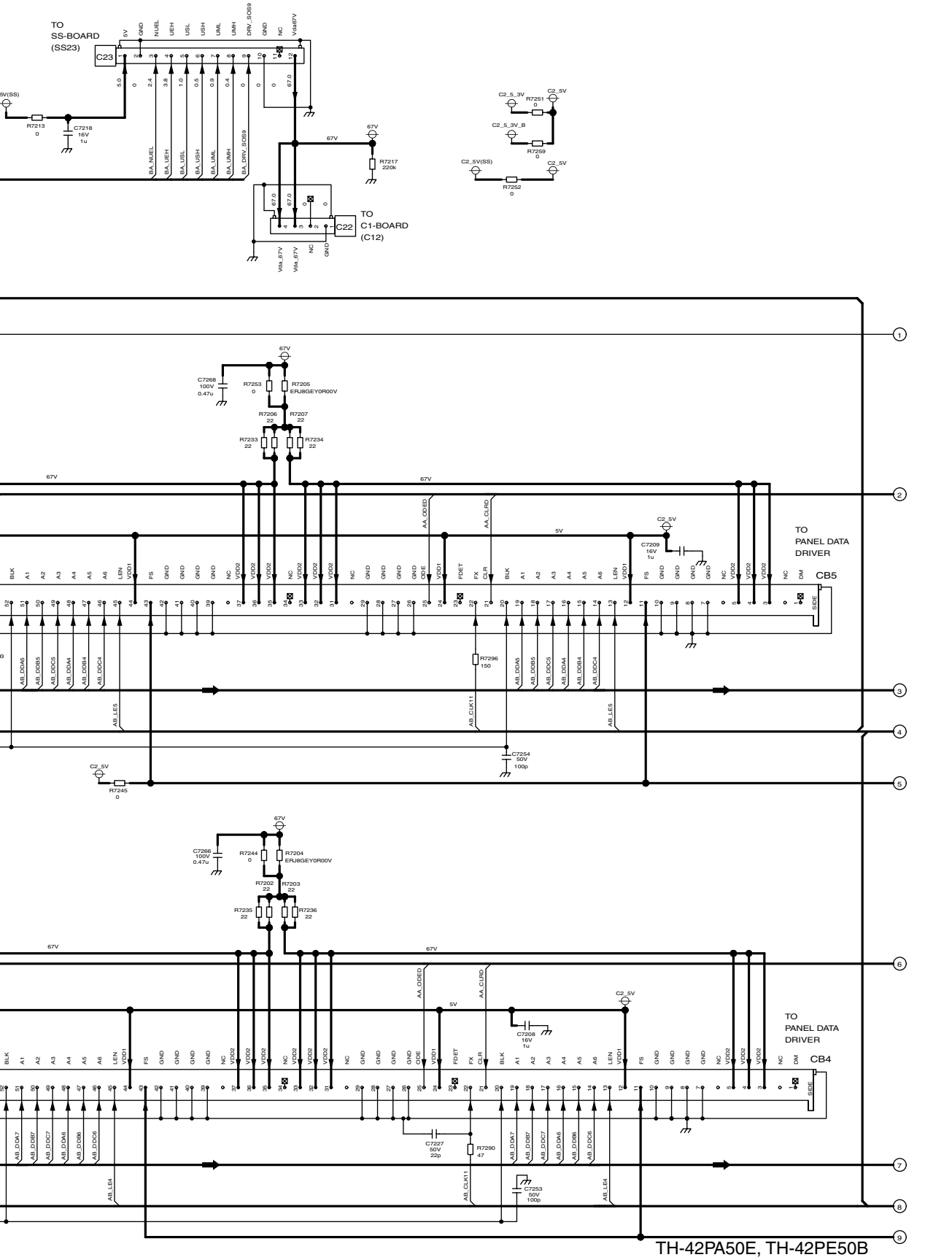
TH-37PA50E, TH-37PE50B
C2-Board (2 of 2) Schematic Diagram

12 13 14 15

14.52. C2-Board (1 of 2) Schematic Diagram (42 inch)



TH-42PA50E, TH-42PE50B
C2-Board (1 of 2) Schematic Diagram

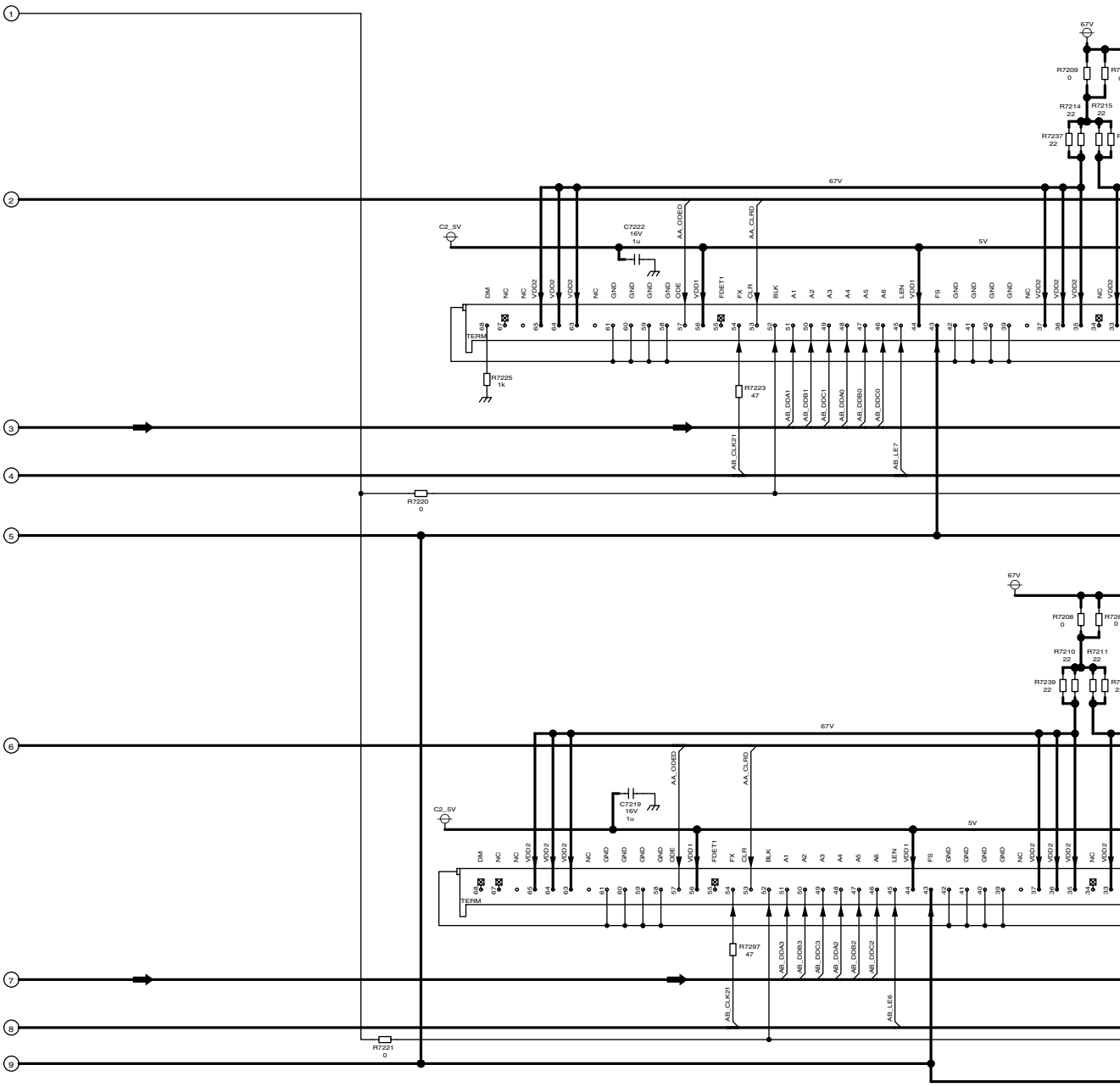


TH-42PA50E, TH-42PE50B
C2-Board (1 of 2) Schematic Diagram

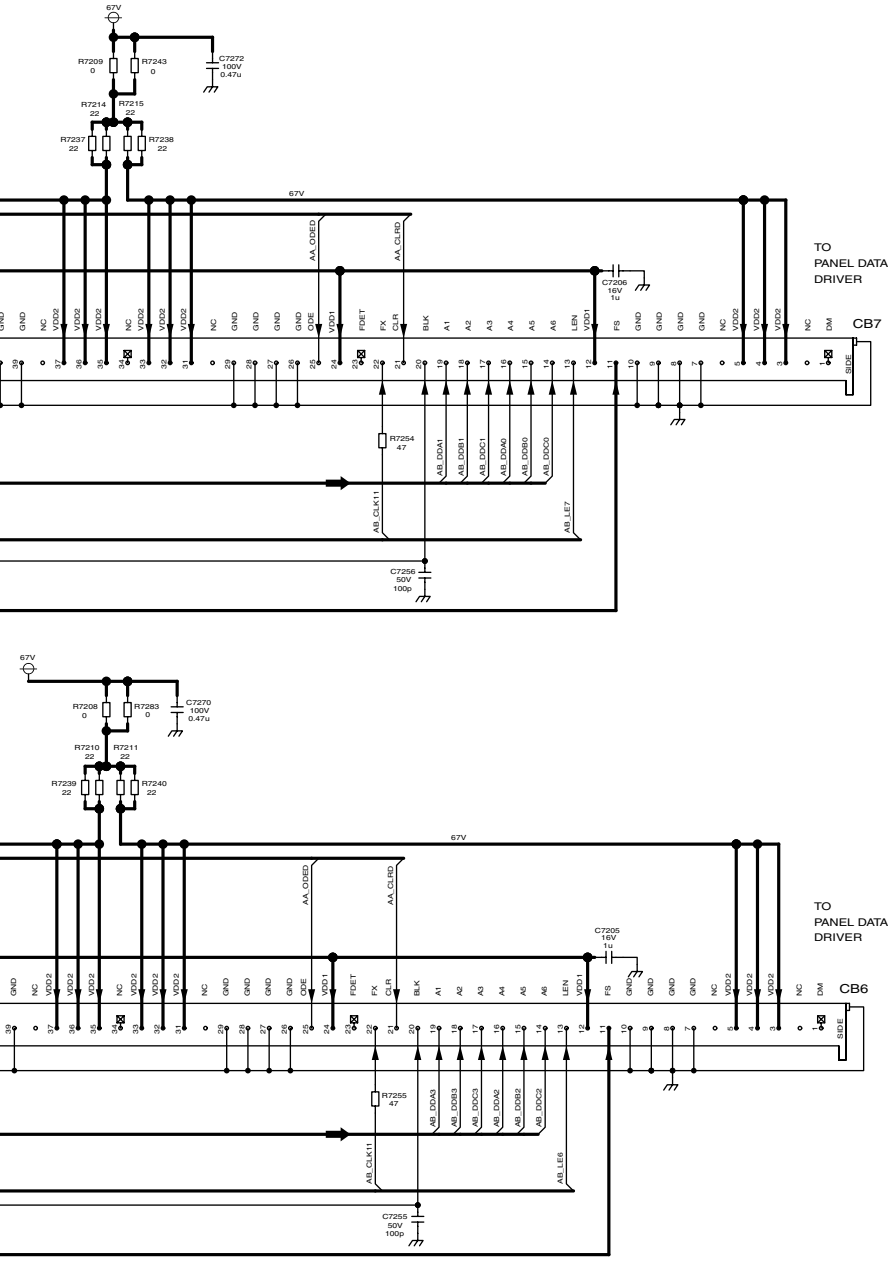
5 6 7 8

14.53. C2-Board (2 of 2) Schematic Diagram (42 inch)

C2-BOARD TNPA3546 (2/2)



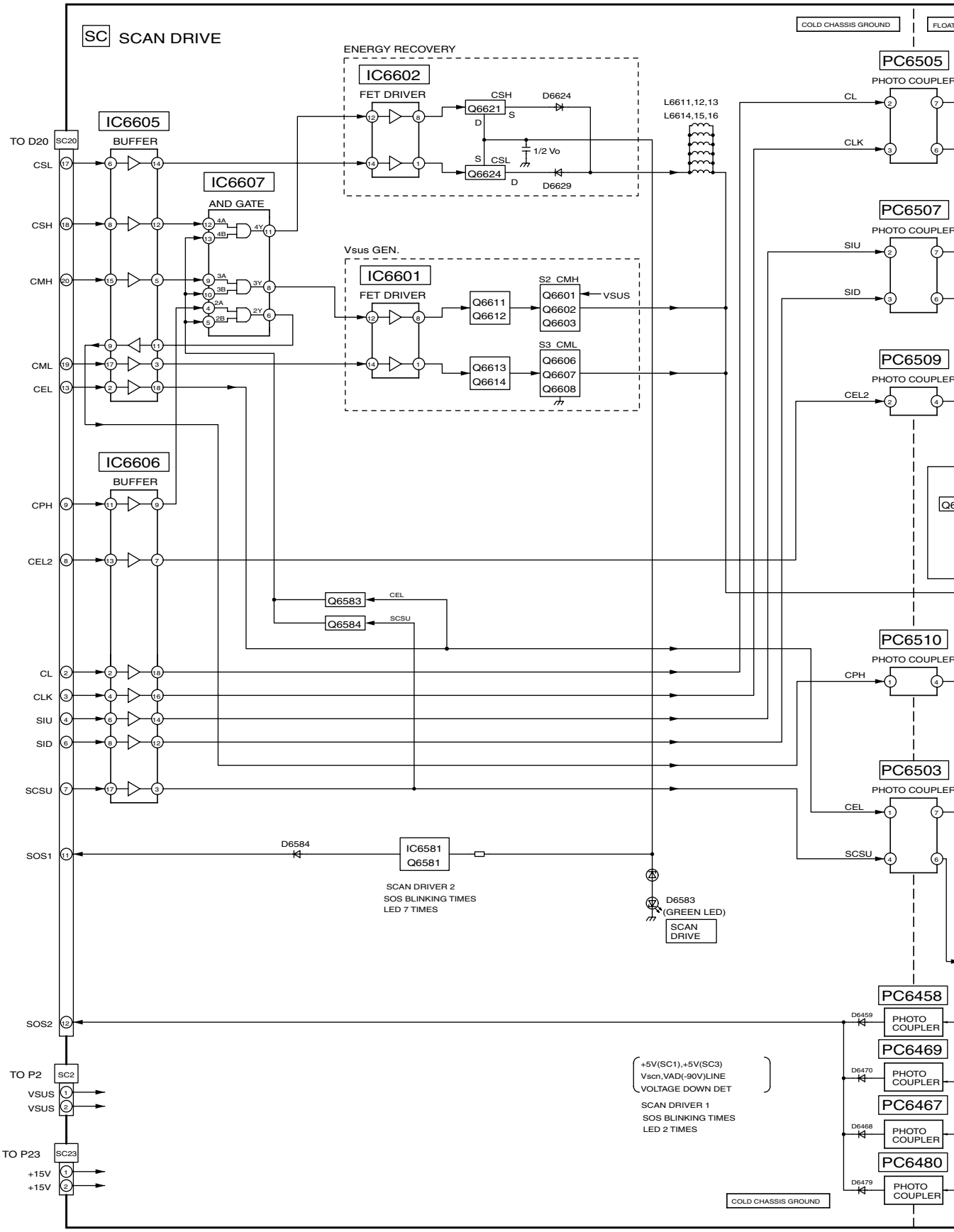
TH-42PA50E, TH-42PE50B C2-Board (2 of 2) Schematic Diagram



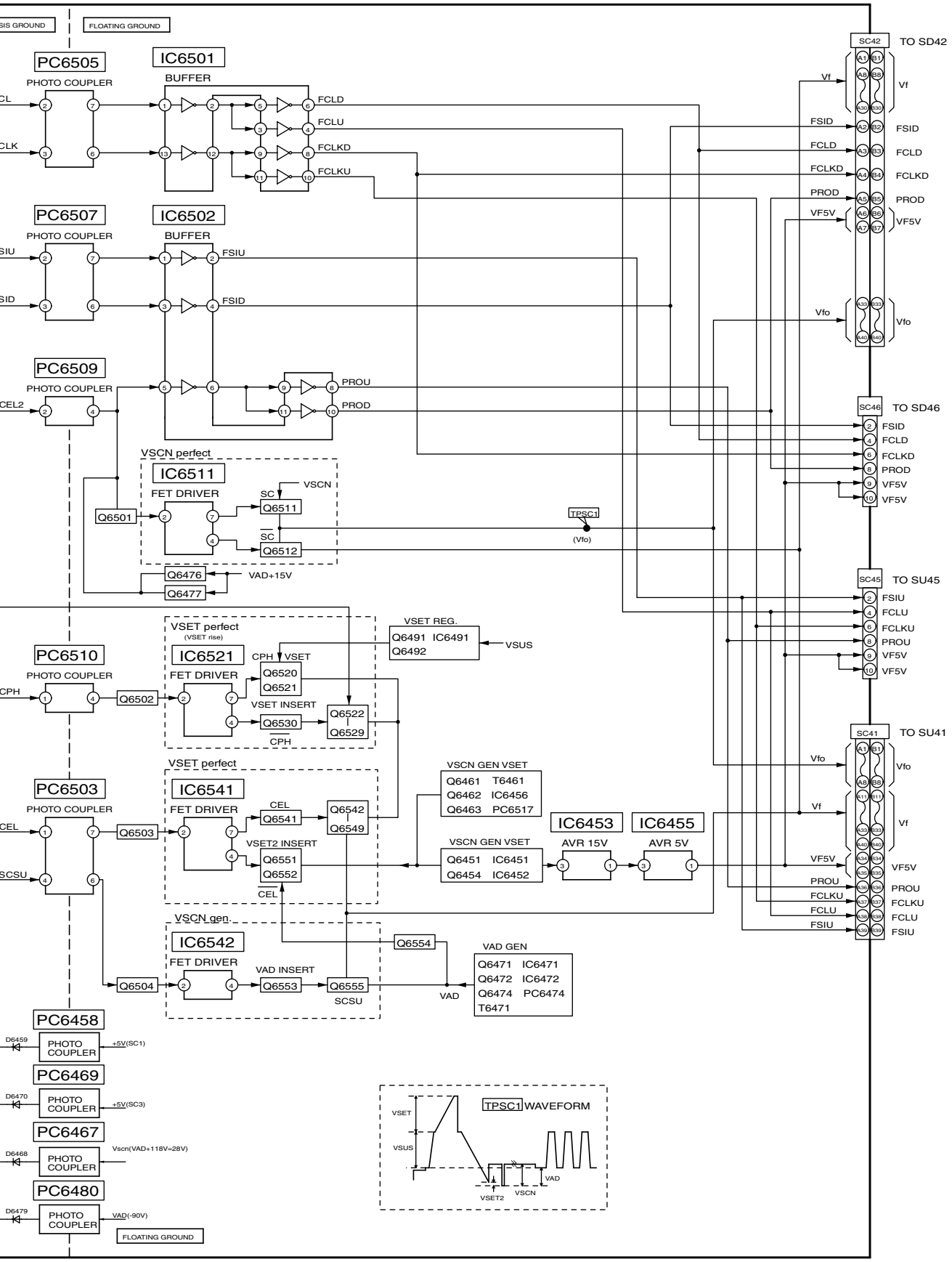
TH-42PA50E, TH-42PE50B
C2-Board (2 of 2) Schematic Diagram

12 13 14 15

14.54. SC-Board Block Diagram



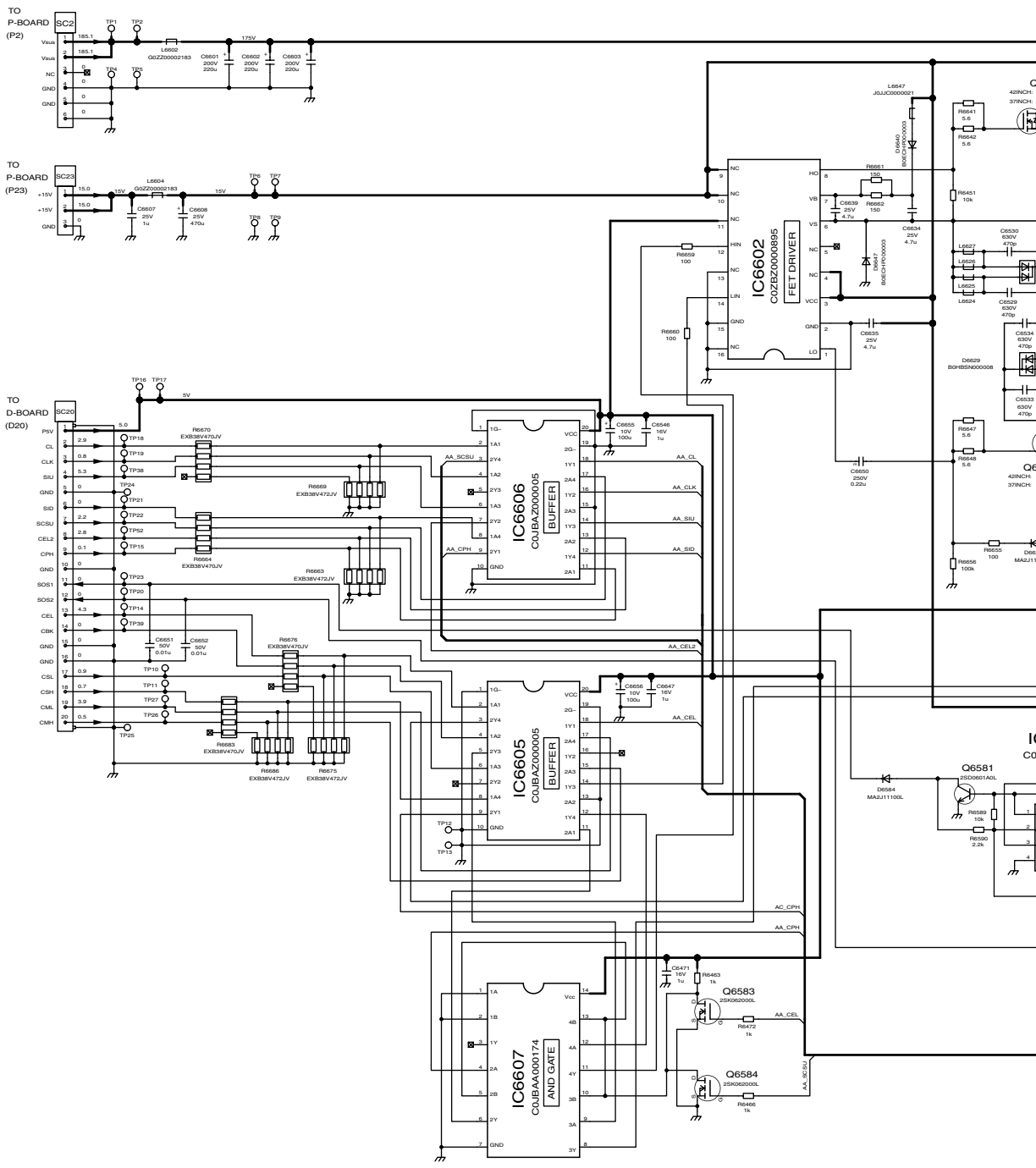
TH-37/42PA50E, TH-37/42PE50B
SC-Board Block Diagram

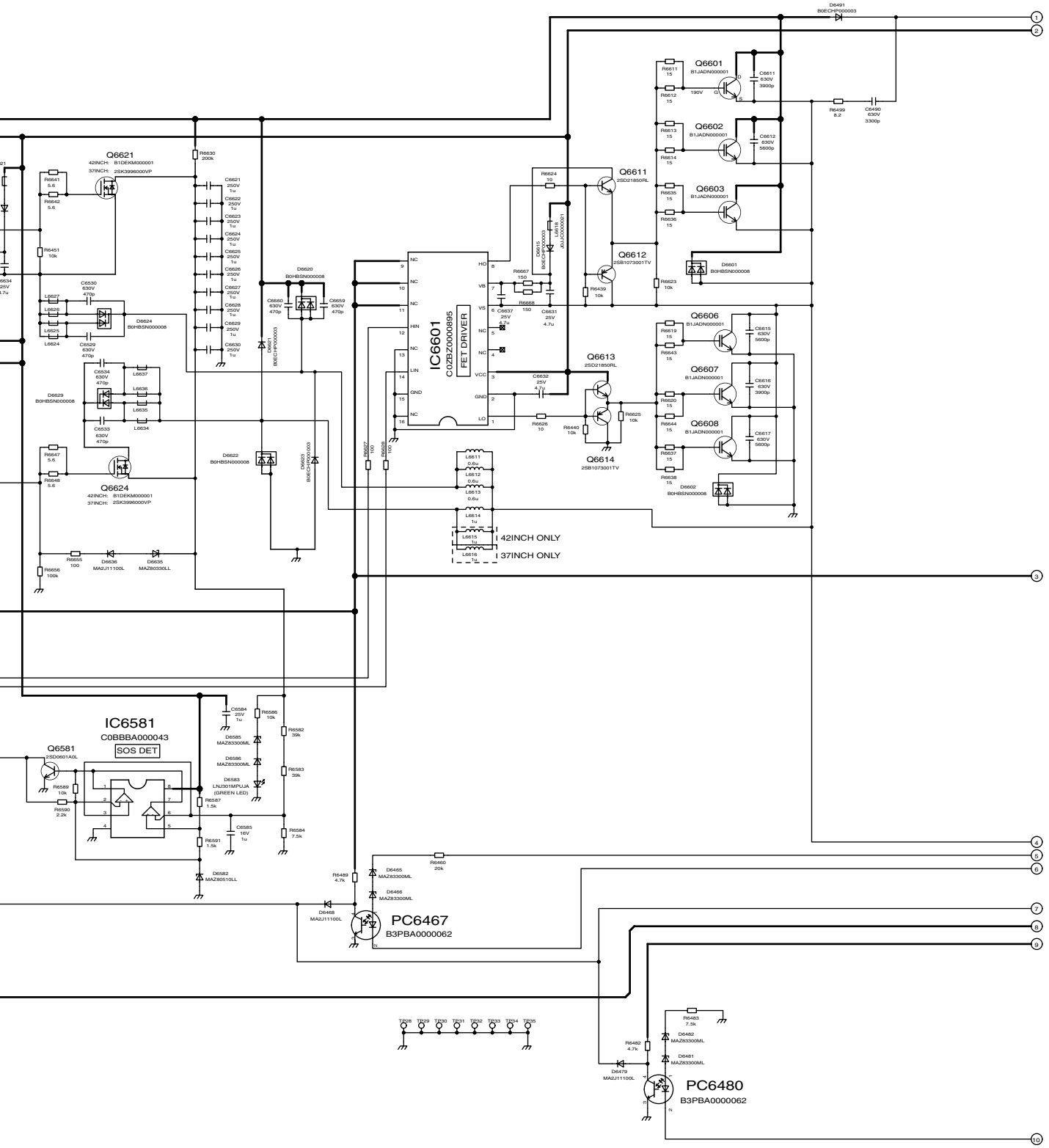


TH-37/42PA50E, TH-37/42PE50B
SC-Board Block Diagram

14.55. SC-Board (1 of 2) Schematic Diagram

SC-BOARD (1/2)
TNPA3543AB (37inch)
TNPA3543 (42inch)

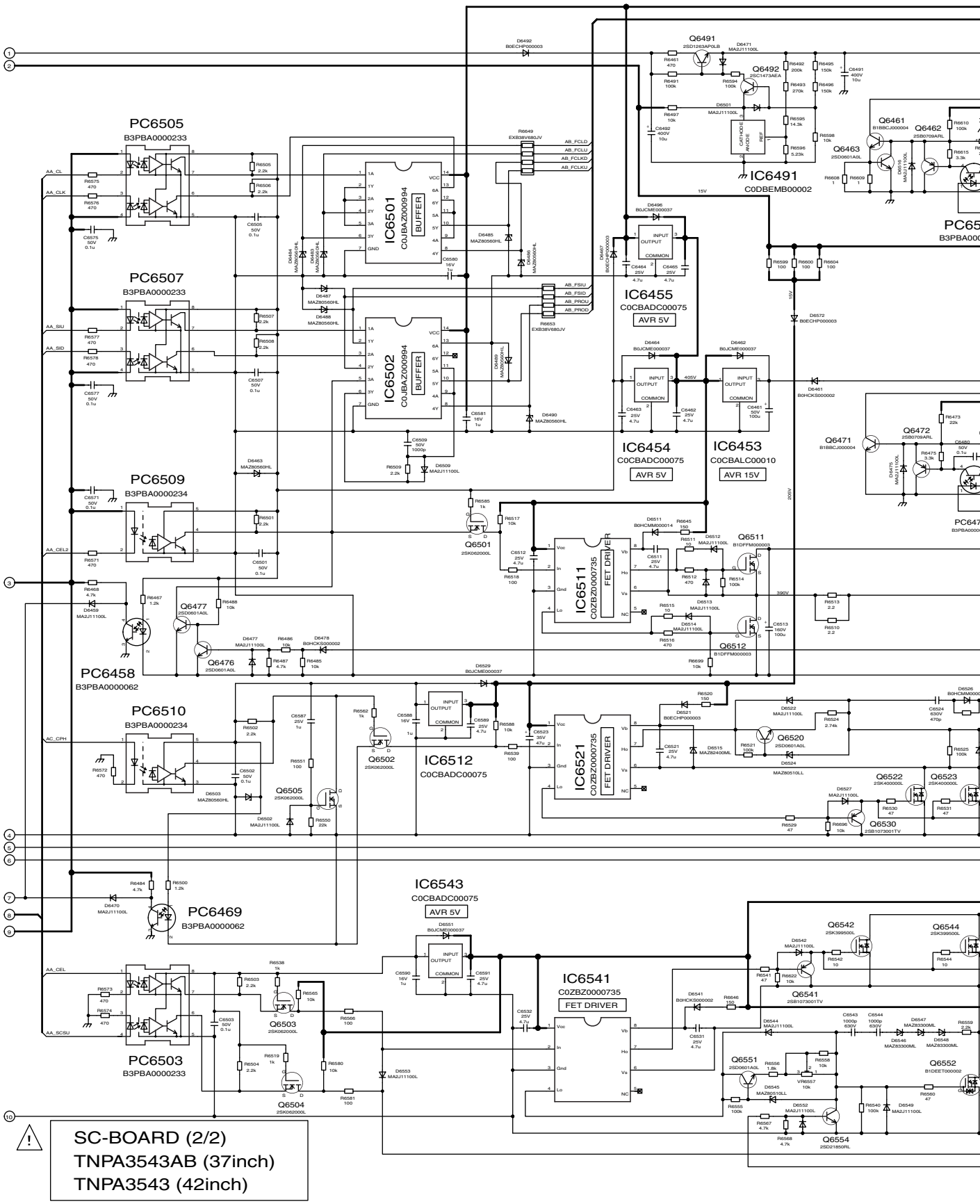




TH-37/42PA50E, TH-37/42PE50B
SC-Board (1 of 2) Schematic Diagram

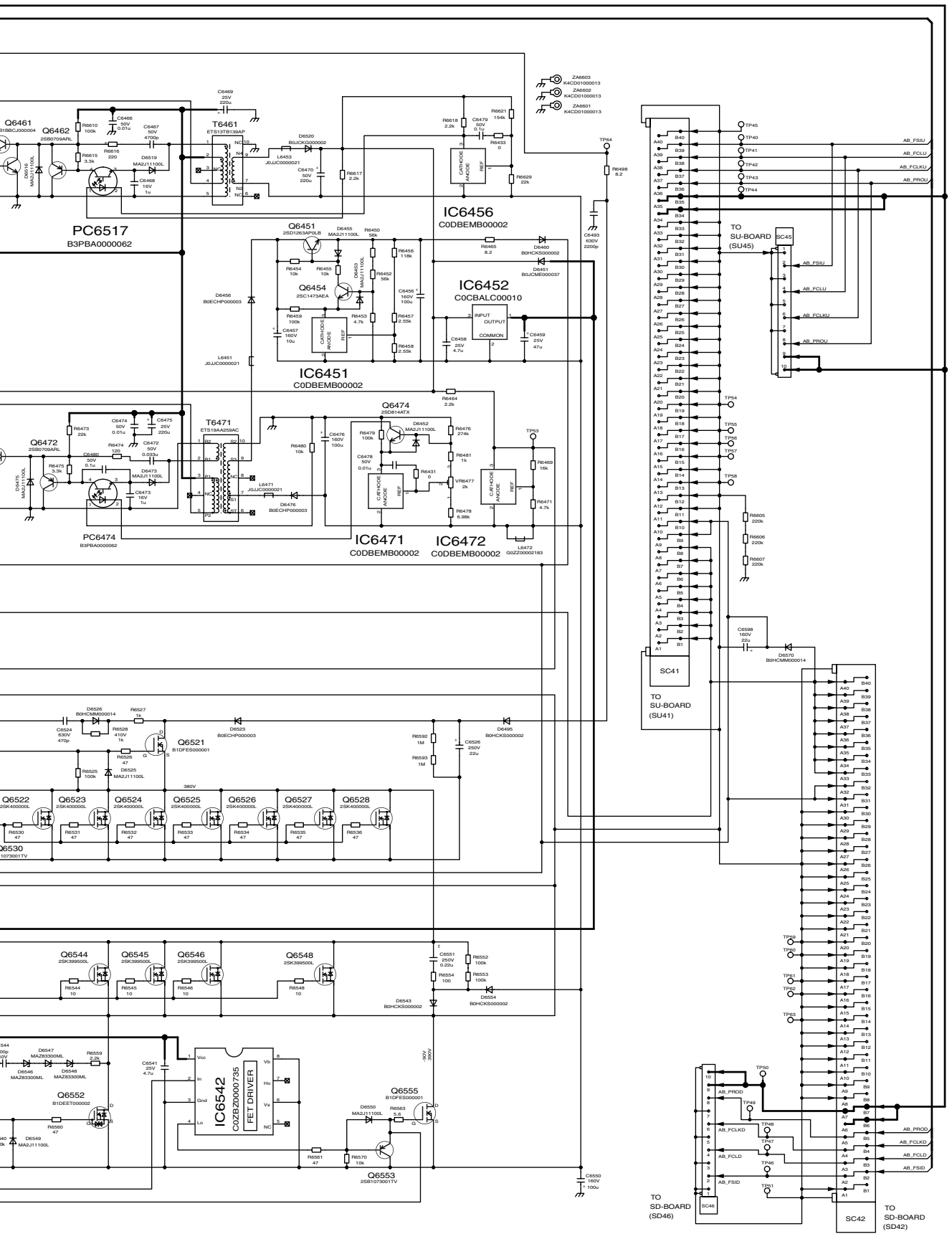
5 6 7 8 9

14.56. SC-Board (2 of 2) Schematic Diagram



TH-37/42PA50E, TH-37/42PE50B SC-Board (2 of 2) Schematic Diagram

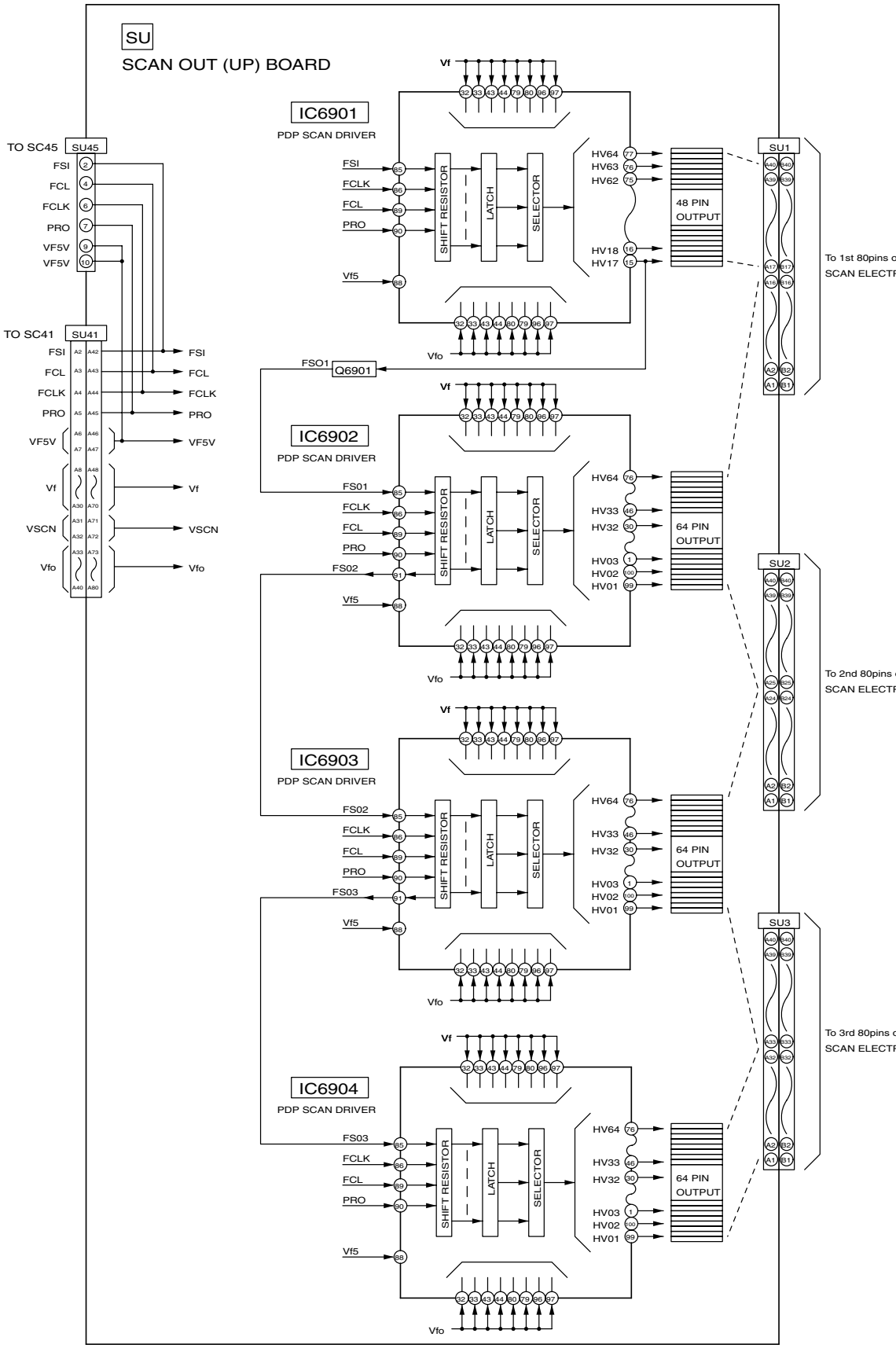
10	11	12	13	14



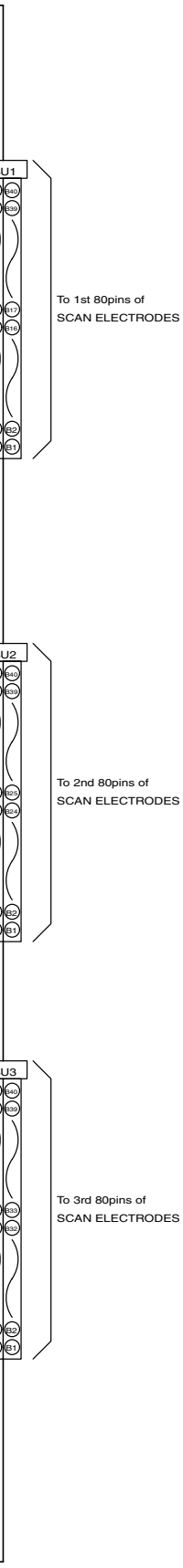
TH-37/42PA50E, TH-37/42PE50B SC-Board (2 of 2) Schematic Diagram

14 15 16 17 18

14.57. SU-Board Block Diagram

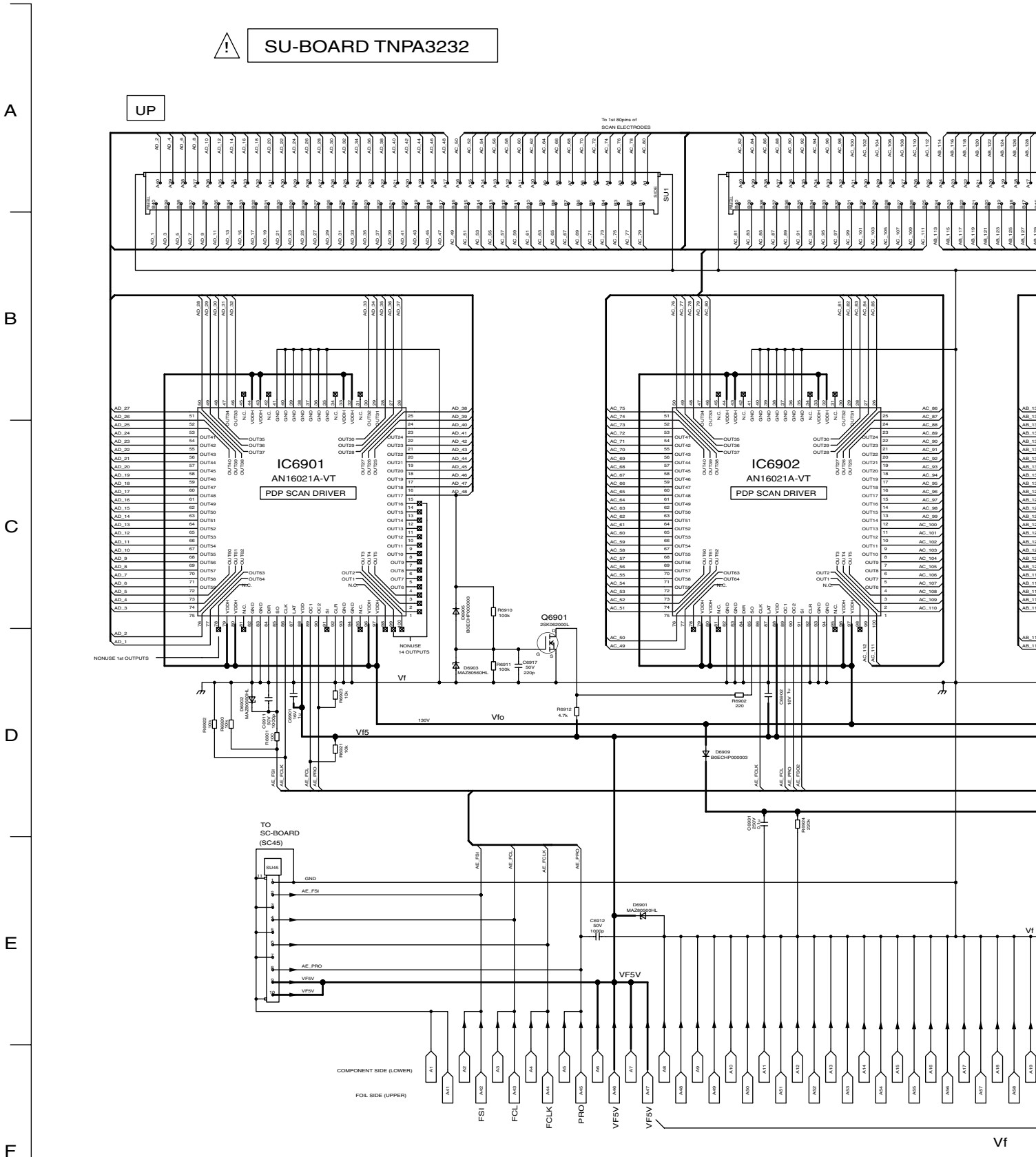


TH-37/42PA50E, TH-37/42PE50B
SU-Board Block Diagram

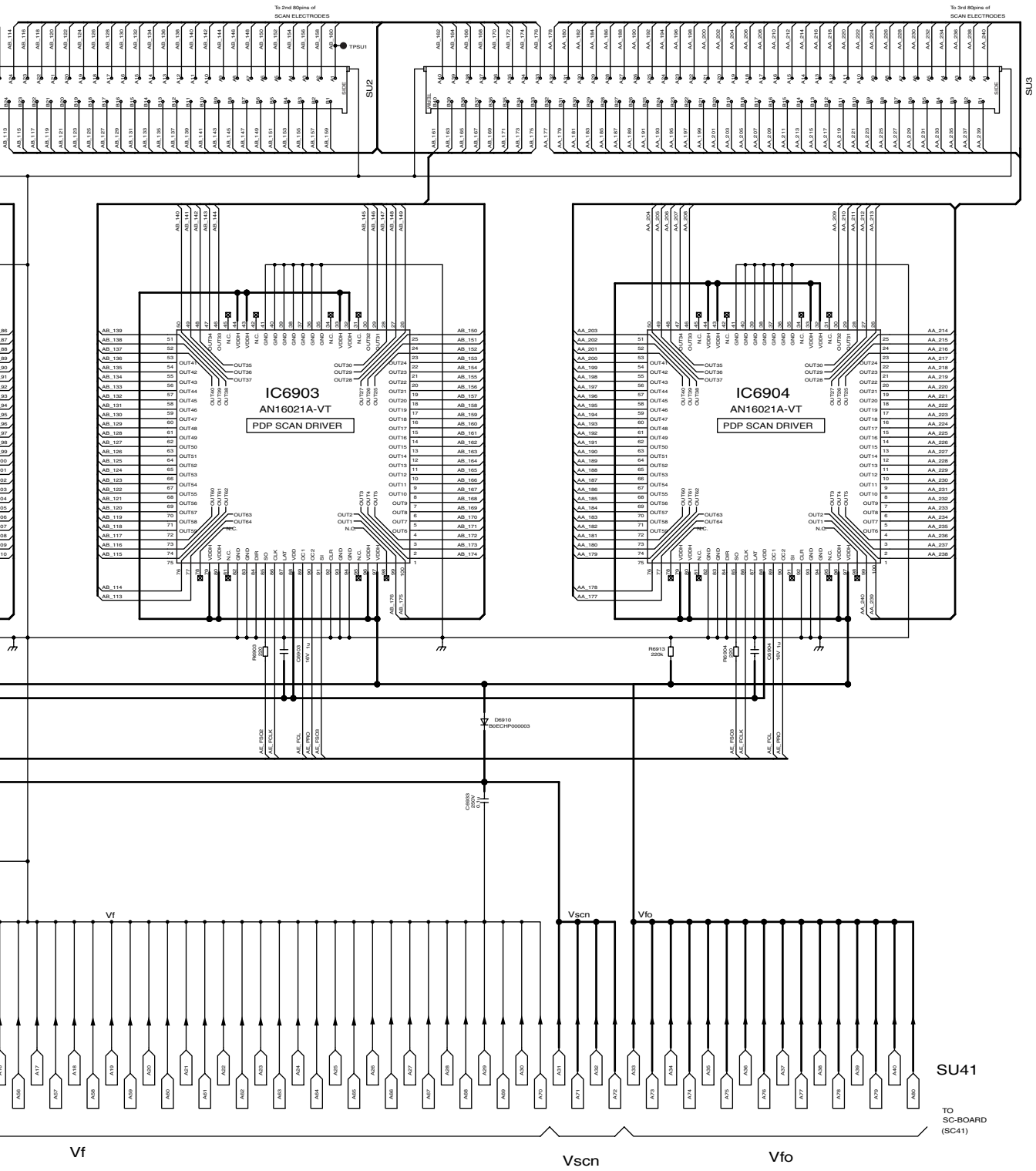


TH-37/42PA50E, TH-37/42PE50B
SU-Board Block Diagram

14.58. SU-Board Schematic Diagram (37 inch)

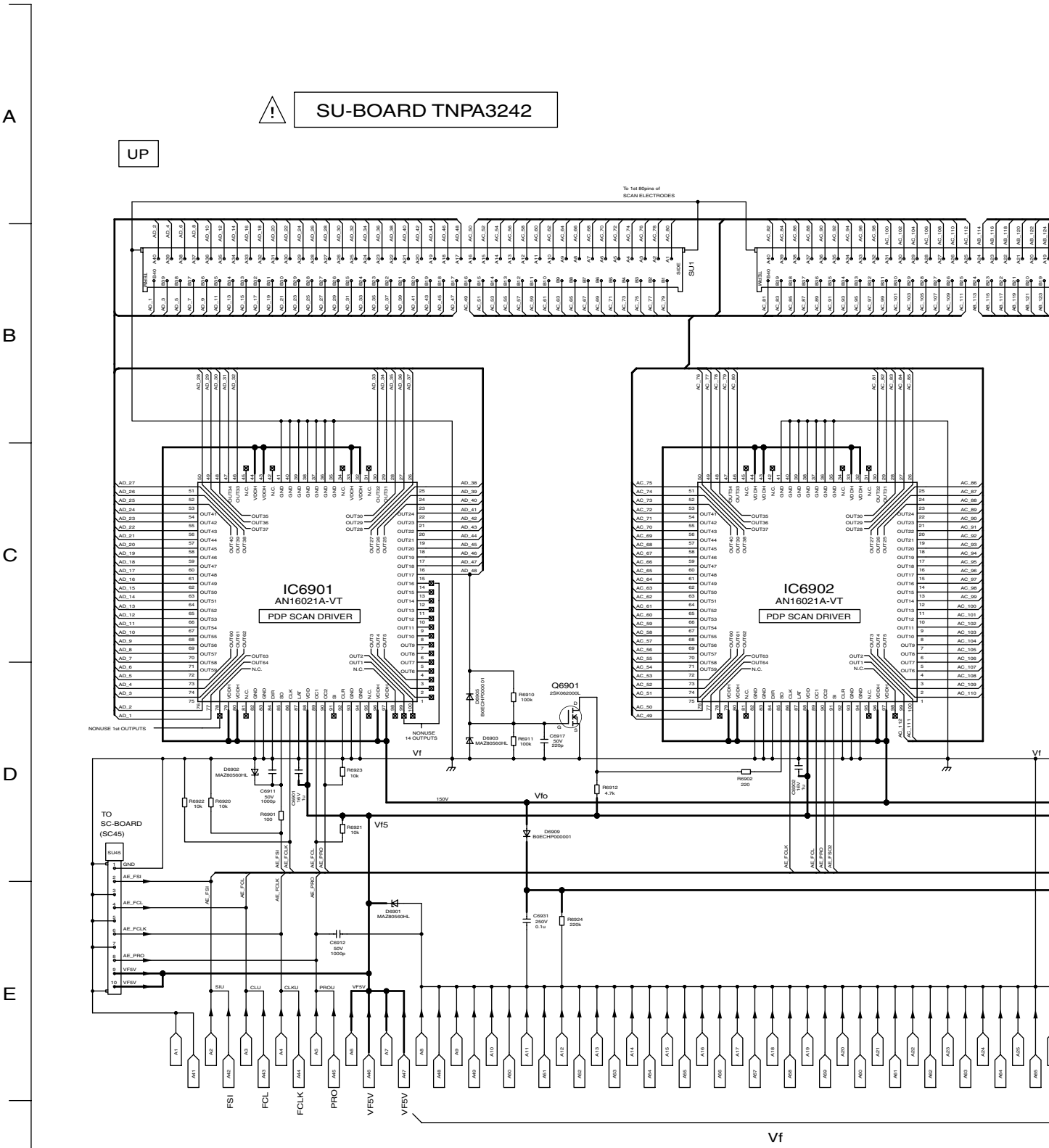


TH-37PA50E, TH-37PE50B
SU-Board Schematic Diagram

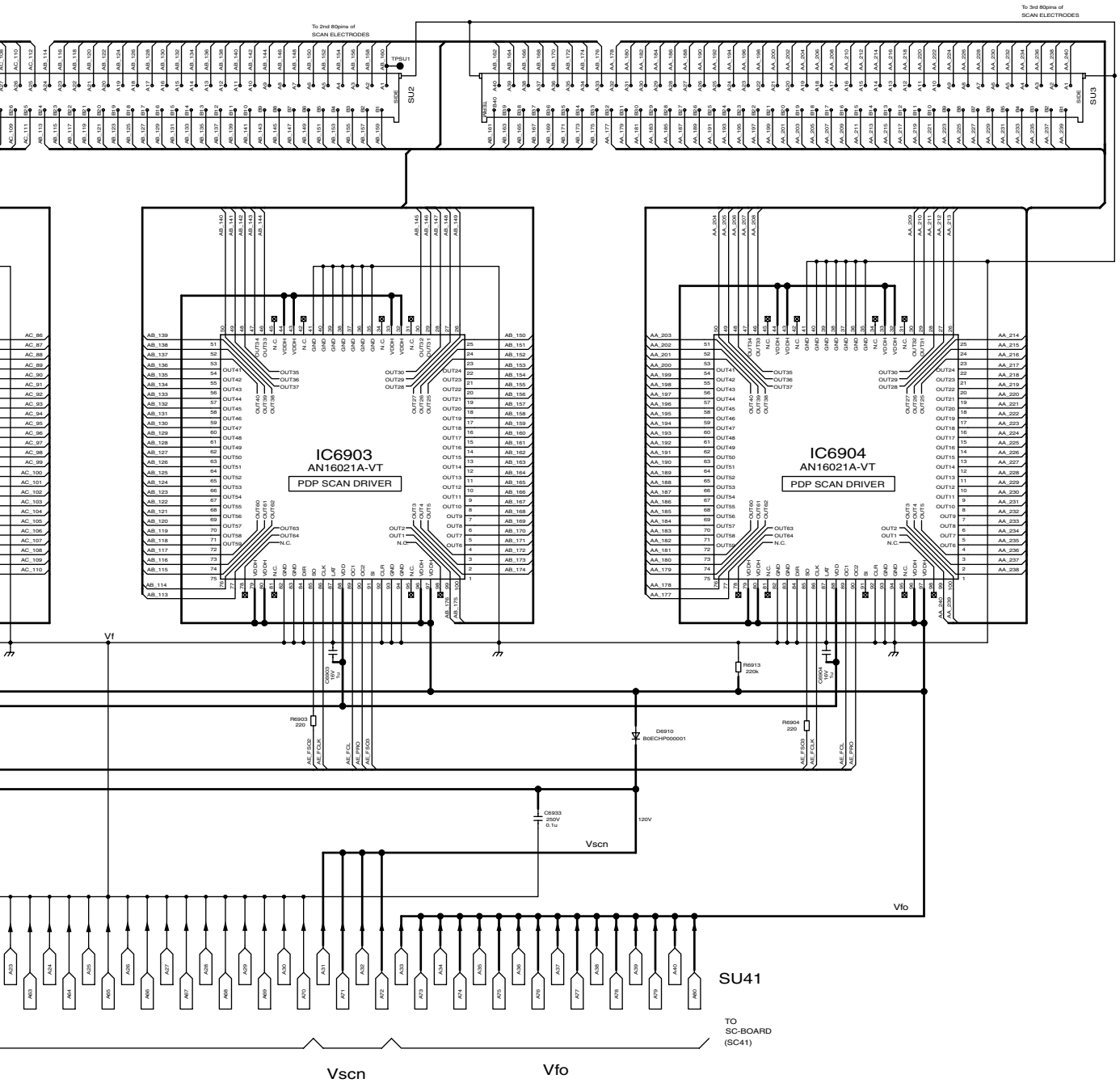


TH-37PA50E, TH-37PE50B
SU-Board Schematic Diagram

14.59. SU-Board Schematic Diagram (42 inch)

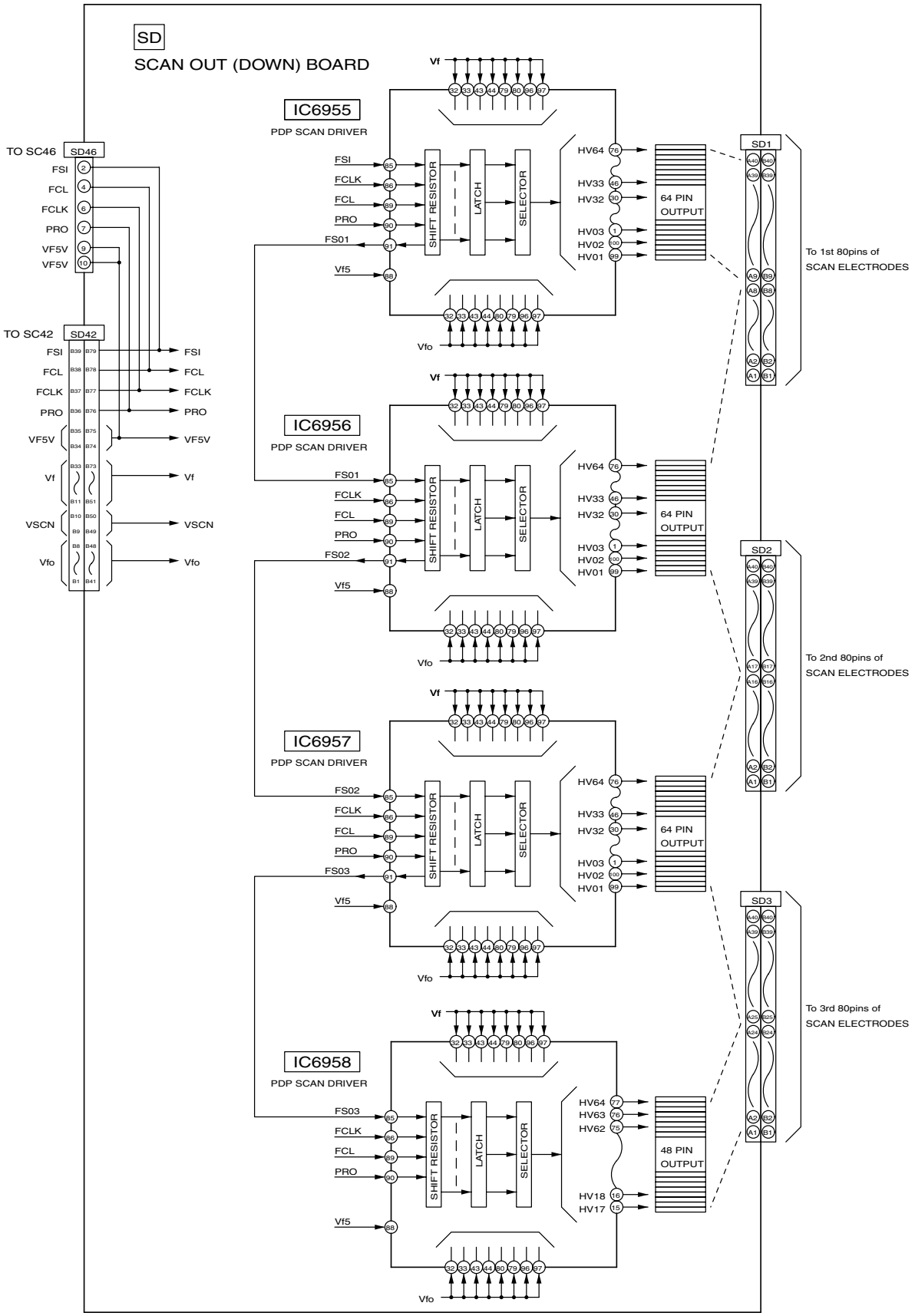


TH-42PA50E, TH-42PE50B
SU-Board Schematic Diagram



TH-42PA50E, TH-42PE50B
SU-Board Schematic Diagram

14.60. SD-Board Block Diagram



TH-37/42PA50E, TH-37/42PE50B
SD-Board Block Diagram

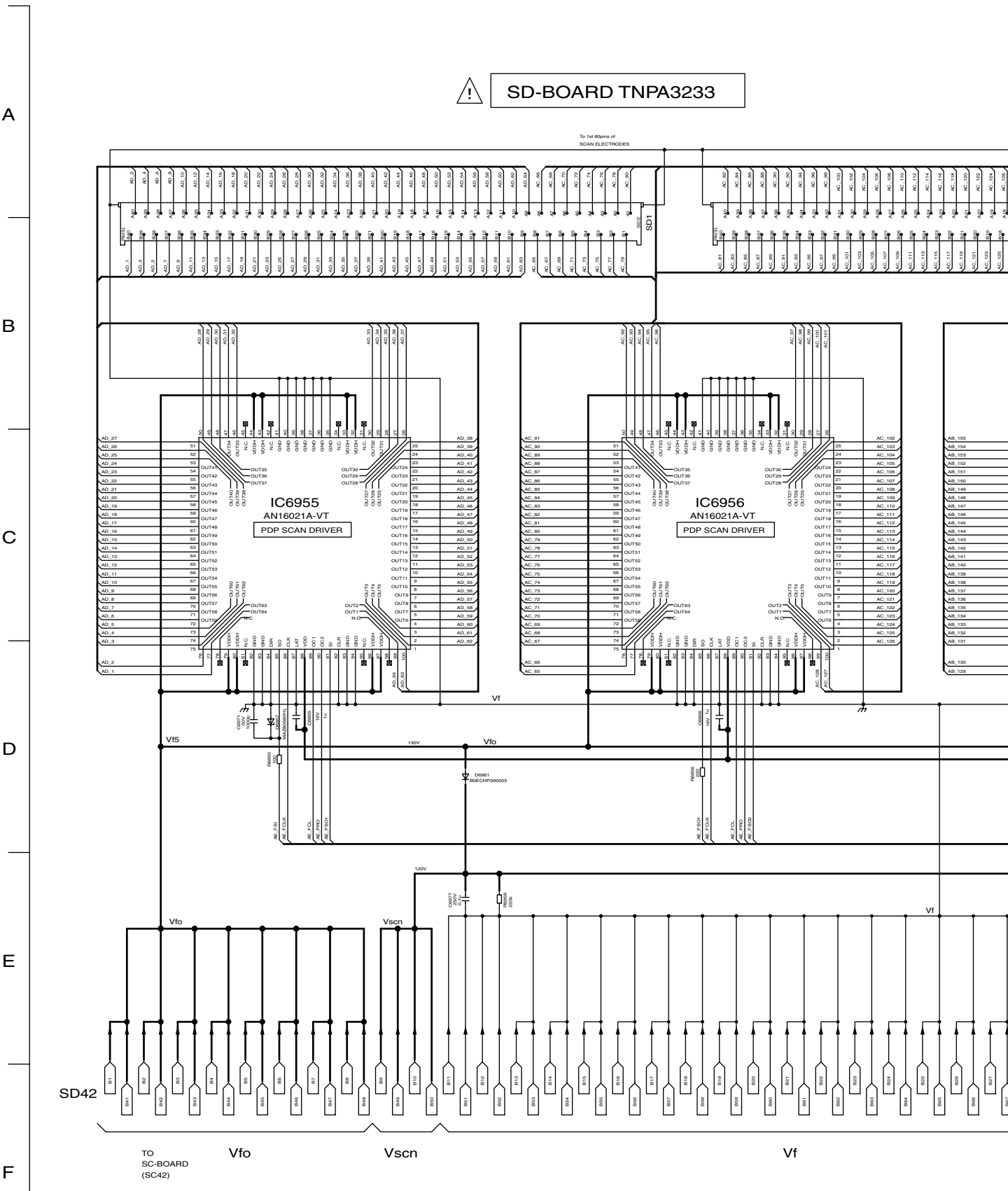
80pins of
ELECTRODES

80pins of
ELECTRODES

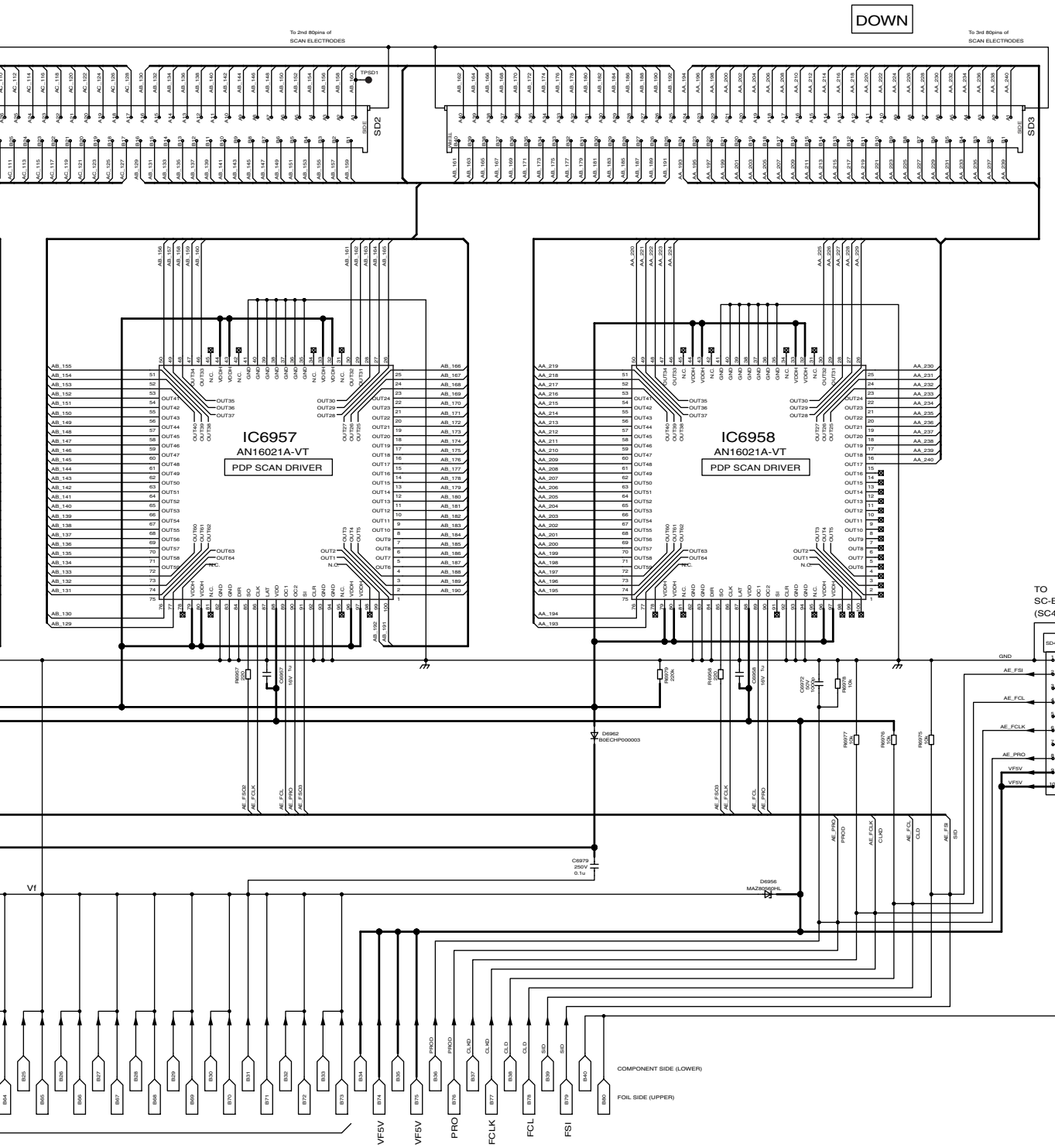
80pins of
ELECTRODES

TH-37/42PA50E, TH-37/42PE50B
SD-Board Block Diagram

14.61. SD-Board Schematic Diagram (37 inch)



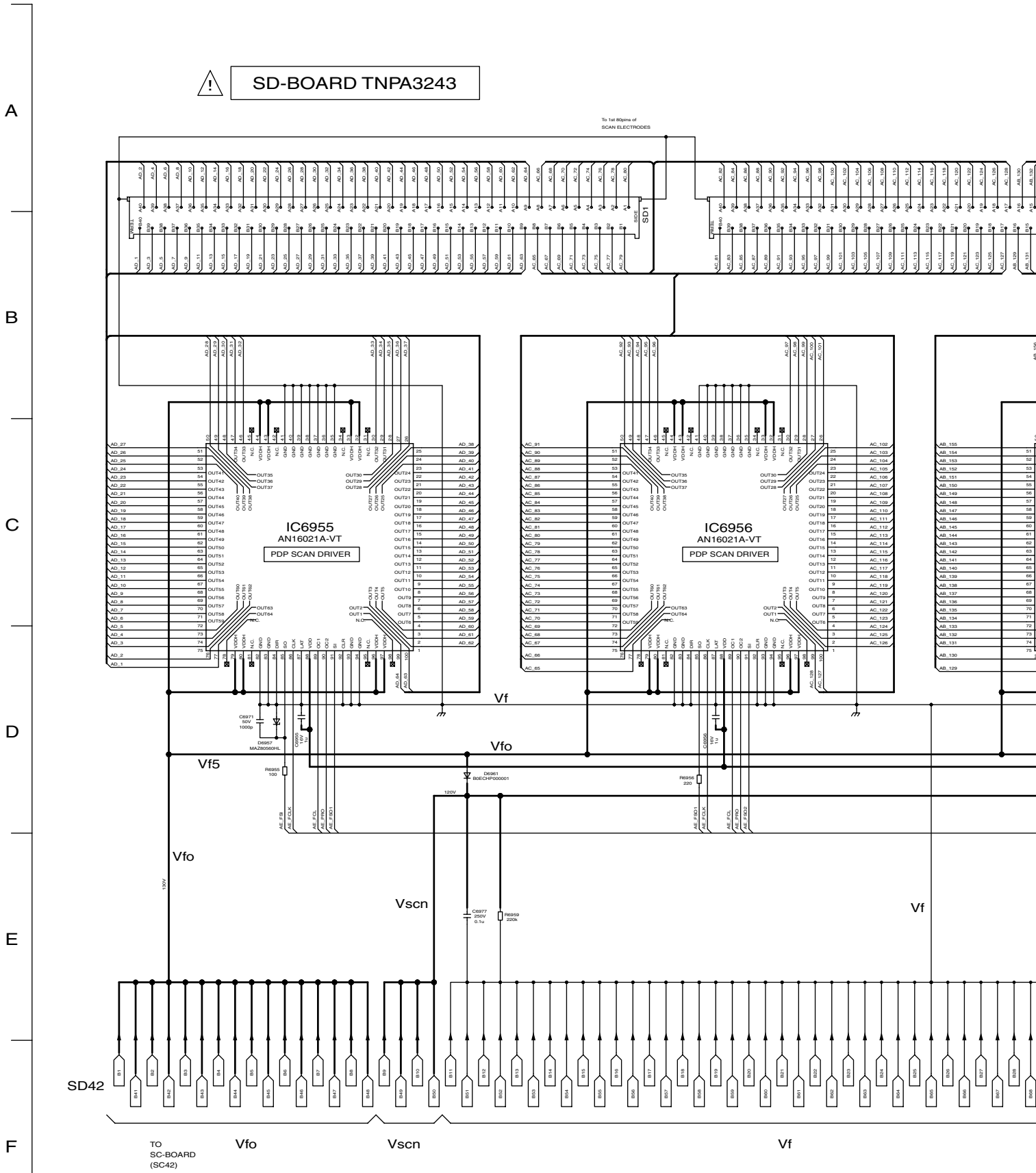
TH-37PA50E, TH-37PE50B
SD-Board Schematic Diagram



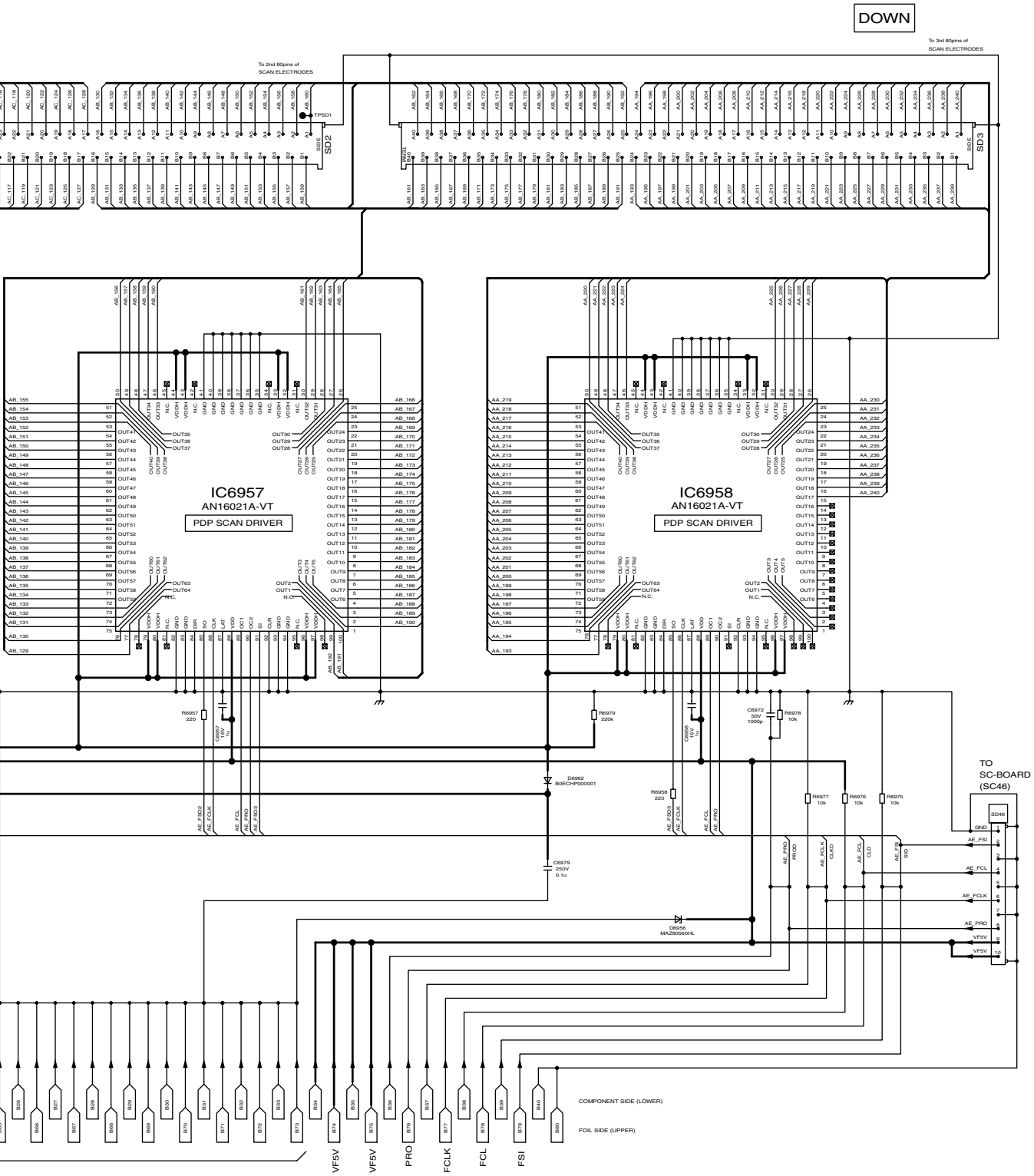
TH-37PA50E, TH-37PE50B
SD-Board Schematic Diagram

5 6 7 8 9

14.62. SD-Board Schematic Diagram (42 inch)

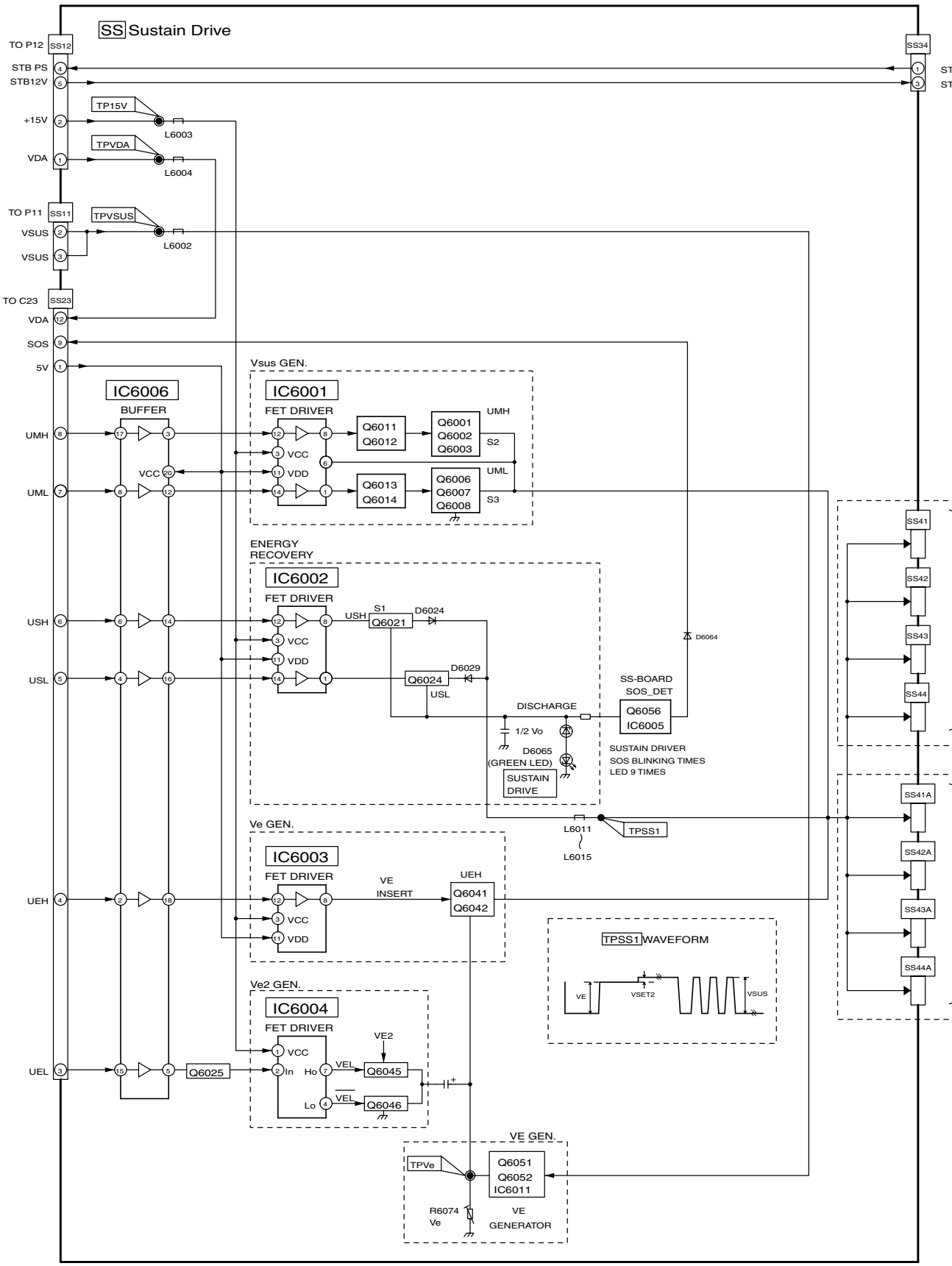


TH-42PA50E, TH-42PE50B
SD-Board Schematic Diagram

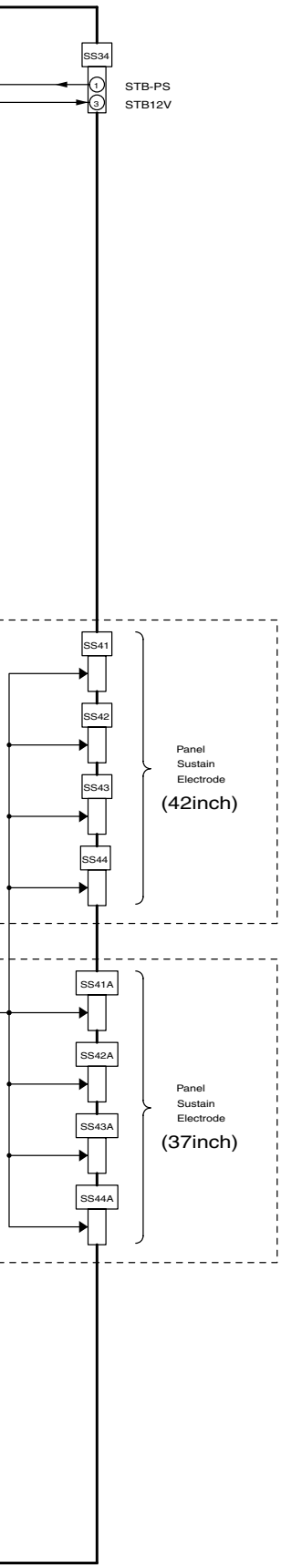


TH-42PA50E, TH-42PE50B
SD-Board Schematic Diagram

14.63. SS-Board Block Diagram

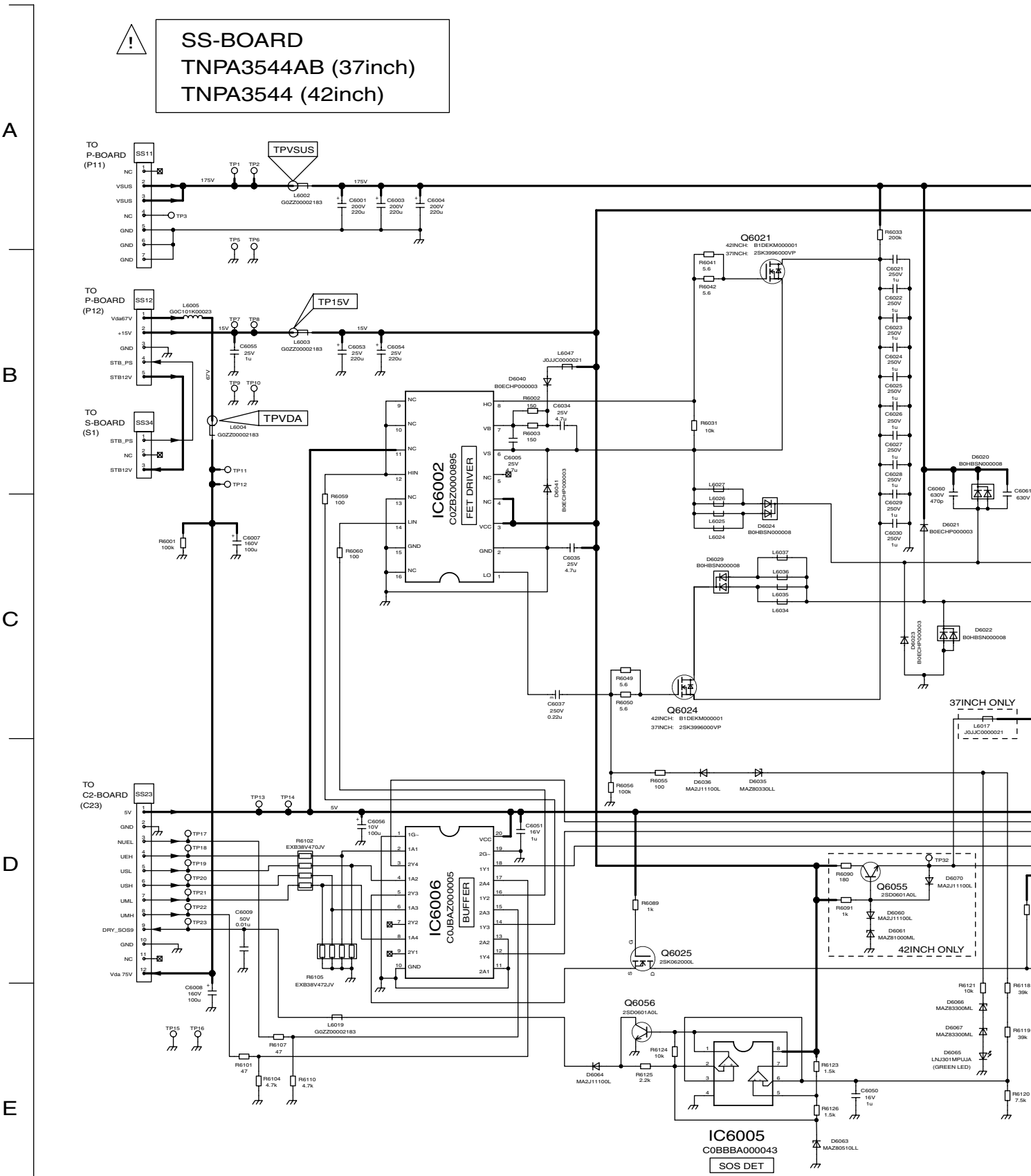


TH-37/42PA50E, TH-37/42PE50B
SS-Board Block Diagram

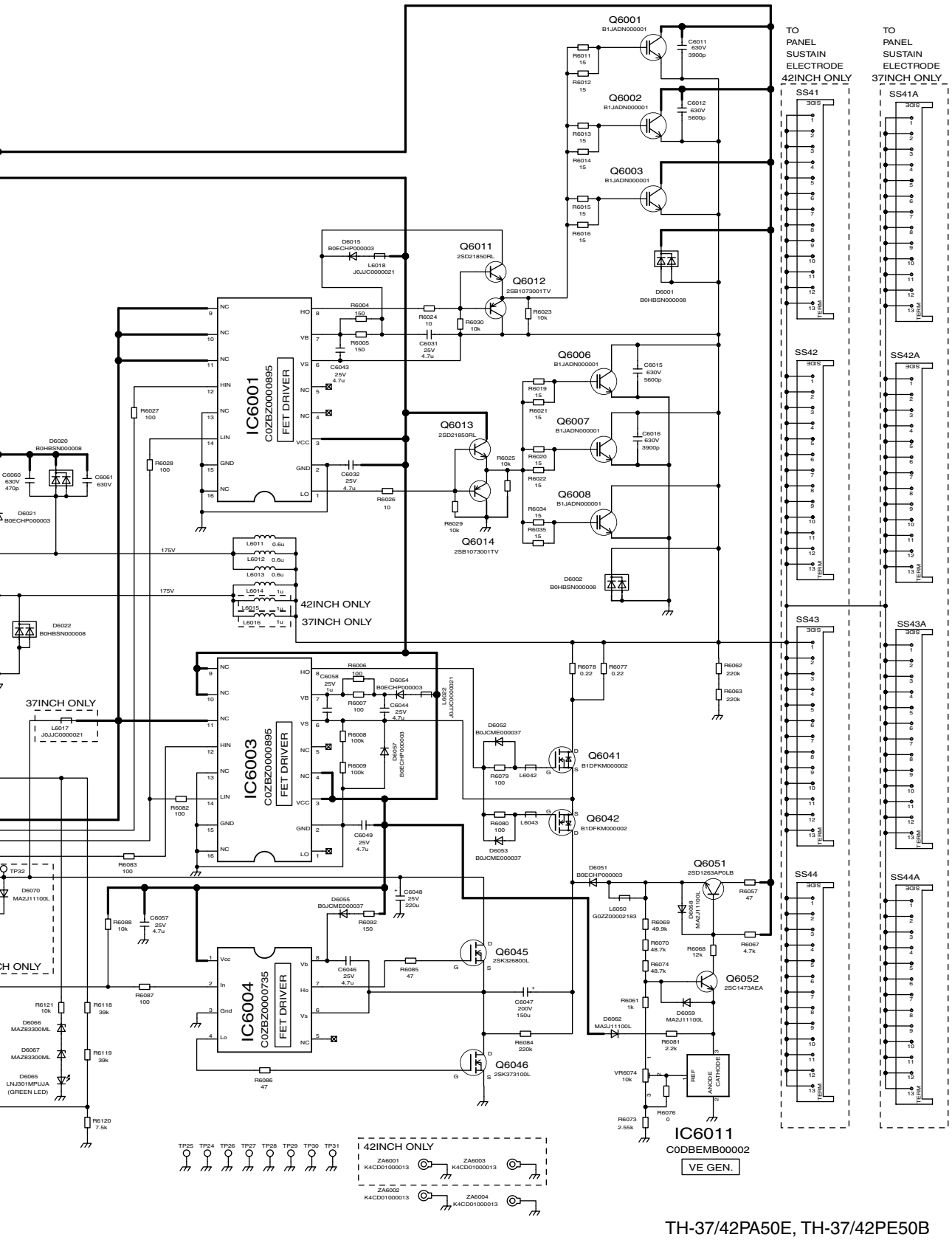


TH-37/42PA50E, TH-37/42PE50B
SS-Board Block Diagram

14.64. SS-Board Schematic Diagram



TH-37/42PA50E, TH-37/42PE50B
SS-Board Schematic Diagram



TH-37/42PA50E, TH-37/42PE50B
SS-Board Schematic Diagram

5 6 7 8